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A TEXT-BOOK OF ECONOMICS

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PREFACE.

THE state of affairs resulting from the Great War has stimulated inquiry into economic questions, not only among University students, but also among that much larger class of persons which feels drawn to take an intelligent interest in financial, industrial, and commercial affairs. The present work is intended to meet the demand thus arising for a new book which shall cover the whole field of current inquiry rather than present the results of original research on some particular question.

The author has been guided in his treatment of the subject by the syllabus of the London University Intermediate Examinations in Economics and in Commerce, but not to the extent of diminishing the value of the book for general purposes.

Some readers may like to begin with Appendices I. and II., and may also like to postpone the reading of the first two chapters, which cannot at first be fully understood by those to whom Economics is a fresh subject.

The Bibliography that follows the Appendices will provide ample material for further study. The author wishes to acknowledge his indebtedness to most of the writers there mentioned.

In preparing this Second Edition for the press, the author has taken the opportunity to make a few minor alterations.

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BOOK I.

CHAPTER I.

HISTORY OF ECONOMIC THOUGHT.

1. Economics in its present form is a modern science, but it is the result of long ages of speculative thought. As economic conditions have altered, so the ideas of men have changed; opinions which have now been quite discredited were held in ancient Greece and Rome, on many economic subjects. Economic questions are discussed in early writings, but the subject-matter of such discussions and the conclusions attained are found to vary from age to age as conditions change. Manual labour, for example, is to-day considered in a different light from that in which it was viewed in mediaeval England, or, again, in ancient Greece. Economic laws which have a wide general application do exist, but the material environment of men is so changeable that a student of economic conditions is influenced largely by peculiarities in that environment; thus, in the nineteenth century, the dominating fact was a remarkable progress on the material side.

The history of economic thought shows very clearly the dependence of theory on environment. Even during the last century when, perhaps as never before, mental energy

was focussed on the theoretical solution of economic problems, practical difficulties were the main stimulant to investigation. Thus, in every age, economic fact is mirrored in economic theory; the classical school attempted to found a universal Political Economy, but the realistic tendency asserted itself again. The doctrine of (historical) Relativity contains much truth; it states that economic theory at any period is mainly determined by the material and mental environment of the period in question. Even the attempt of the classical school to found a universal science can be explained in terms of relativity. In every period, there are significant omissions in the prevalent theories, and disproportionate stress is laid on certain points; such peculiarities are usually explicable when the economic life of the period is taken into account.

There are scattered references to economic conditions before the days of Greece; the old Eastern civilisations were built on an agricultural basis, and economic precepts are coloured accordingly. There were attempts to reach a better standard of morals, and the Old Testament contains many references to economic conditions in an agricultural or nomadic community. The earliest representatives of modern economic theories are thus contained as incidental allusions in the speech or writings of early poets, lawgivers, and priests. Economic thought until the nineteenth century was tinged with moral feeling.

2. In Greek times, the modern economic problems began to appear. In the city states, a small aristocratic class dominated the community, and production was carried on largely by slave labour; none the less, there was already a growing class of traders, who tended to increase in importance with respect to the aristocratic cultivators.

**Greek Writings
on Economic
Subjects.**

Money became the medium of exchange, especially in trading transactions, and the evils of credit, speculation, and greedy acquisitiveness became apparent; luxury was regarded by the philosophers as a danger to the State. Side by side with the attacks on the abuses prominent in a gold Economy, there were published treatises on the art of husbandry.

Already in the fourth century B.C. there had developed an idealism which contrasted as strongly with the descriptions and criticisms of the existing system as does the modern communist with the realistic school. Plato was in some measure the precursor of the modern communistic socialists, for he pictured a State which should avoid the evils of contemporary life, and in which selfishness tended to disappear. Though he believed in the equal distribution of property (among the aristocratic classes), he realised that it might be necessary to check the growth of population, *e.g.* through exposure of infants and the abolition of early marriages. Plato had the ideal of a community of aristocrats who lived an agricultural life as the heads of large slave plantations. He disliked foreign trade and luxury, and would have banished money from use; he held interest to be immoral.

The genius of Aristotle lay rather on the practical and realistic side: he criticised many contemporary schemes, and did not believe in the practicability of equal distribution of property, laying stress on the problem of population; he favoured measures which would have checked the increase of numbers. He dealt more fully with economic questions than did Plato, and showed a better grasp of practical problems. He realised that a change was taking place from a number of separate household Economies to a larger economic grouping depending on foreign trade, and involving the use of money. Aristotle

accepted the necessity of metallic money, but held that it was not identical with wealth; money was barren, and hence should not carry interest.

Aristotle considered the State as a combination of men of different faculties; he held that each of the social classes contributed something towards the general well-being, and that they were harmoniously grouped together. None the less, he shared Plato's opinion as to slavery; this is the more surprising in that moral objections to slavery were beginning to appear. Aristotle thought that the mental and moral differences between the possessing classes and the slaves were so great as to justify the system; he fully shared the prevailing opinions that great progress was possible only to the privileged classes. The democracies of the Greek city states were built on a foundation of slave labour.

As Plato favoured a unified State under strict control, while Aristotle was willing to accept the fact of diversity of occupation and activity, it is not surprising that the latter was more favourable than the former to the growth of free enterprise. Aristotle accepted the facts of economic life as he found them, though he might suggest possibilities of reform; Plato is rather to be regarded as the great idealist who pointed the way to far-reaching changes which were not likely to occur, but whose possibility stimulated economic thought. In just such a way have the socialists influenced economic thought in modern times.

In the same great period lived Thucydides and Xenophon. In the fifth century B.C. the former wrote his histories, which contained valuable economic criticisms; he was a keen observer of the life of his own time. In the next century, Xenophon treated economic subjects from the practical standpoint. He shows the preference

for agriculture which is noticeable among so many of the classical writers, but realised the new importance of trade and manufacture. He studied the problems of household economy, but did not neglect foreign trade; he realised that the export of money did not make a State poorer.

3. After the great days of Greece, there was no startling development of economic theory till the later mediaeval period. The Romans, an eminently practical people, contributed little new to economic literature, for most of their ideas were borrowed from the Greeks. Pliny to some extent disapproved of money; he believed that barter was preferable to its use. The Roman writers mostly disapproved of interest, though, at a later date, legal fictions allowed of such payment for the use of money. They shared the Greek partiality for agriculture, as inculcating the finer virtues; *e.g.* Cicero had no respect for trade, as it was not a suitable occupation for an educated man. Many writers wrote treatises on agriculture, which, as among the Greeks, was largely carried on by slave labour. Some writers, *e.g.* Varro and Columella, saw that slave labour was inferior to free; a growing opposition to this form of labour was a characteristic of these times.

4. In the revival of thought and action which began to be noticeable in the twelfth and thirteenth centuries, a new stimulus was present in the form of Christianity. Thus the new economic ideas which began to develop were influenced by classical thought, by the nature of the material environment, and also by ideals which had little influence on the older civilisations. The ideas of Plato and Aristotle were revered, but of necessity they had to be interpreted in the light of new experience. Trade was no longer in the hands of an inferior class, and manual labour

Roman
Writings.

Effect of
Christian
Ideas.

was not now almost synonymous with slavery; this institution was slowly disappearing; labourers were no longer slaves, but serfs; the transition from slavery to personal freedom was beginning.

St. Thomas Aquinas, in the thirteenth century, was a follower of Aristotle, though he tried to combine the principles of the Greek philosopher with those of Christianity. Aquinas followed his master so closely that he even countenanced slavery. A new civilisation was, however, developing, in which manual labour was carried on by villeins and other serfs who were only partially bound to a lord, and in which trade was in the hands of freemen, who were sometimes wealthy. Thus the old classical ideas had to be revised.

5. In the fourteenth century, trade and industry were being controlled more and more by powerful **Mediæval Economic Theory.** gilds, i.e. associations of traders or craftsmen. Goods were made on a small scale, and the law of increasing return, which is so prominent in our modern capitalistic Economy was then hardly operative. Thus the economic thinkers of that time were concerned, not to attack or despise trade, but to regulate it. In these times, goods were made largely by actual physical labour, without the aid of capital as the modern manufacturer conceives it. To-day, the entrepreneur tries to earn large profits on his capital; then, it was thought immoral to produce for the sake of gain, as apart from fair remuneration; if a merchant had bought goods merely to sell again at a large profit, his action would have been considered anti-social. Thus, it was held to be of importance that goods should sell at their real or just price.

Even to-day, there are traces of this old idea, that there is a fair price for every article; the late outcry against

profiteering assumed the existence of a moral factor in the fixing of price. In those days, however, there was far more excuse for regulation of prices; violent fluctuations of conditions of demand and supply were then of less importance than at present; it was possible to fix a fair price for a commodity without much difficulty. The contemporary theory as to the necessity for a fair price was a result of the fact that regulation of prices worked well in practice. A fair price, on the whole, was the one which gave a livelihood to the maker of the article in question.

6. There is little doubt that the doctrine of a fair price was in consonance with current Christian
Usury. ideas, which were responsible also, partly at least, for the mediaeval prohibition of usury; the Christian church at this time expressly disapproved of interest. Here, again, it is probable that the condemnation of interest was justified, for as little or no capital was employed in industry, the need for an accumulation of capital goods did not exist. Those men who demanded payment for loans were probably taking advantage of the temporary needs of their debtors; interest was not the economic necessity that it is to-day. Thus, Economics in early mediaeval times, so far as it existed, was a department of morals. Charity was enjoined by the Church as a Christian duty, and avarice was condemned; the enterprising speculator was disliked.

Perhaps the greatest name in the fourteenth century in respect to economic writings was Oresme, whose opinions on the functions of money were not very dissimilar to those of present-day economists. A group of writers on money began to dissociate themselves from the opinions of the followers of the classical philosophers; they recognised that money was a necessity, and not in itself evil.

In the fifteenth century, the reaction against the canoni-

cal-classical school continued. Trade became more important relatively to agriculture, and currencies played an increasingly important part in national economic life. At the same time, the laws against usury were being gradually undermined by the course of events; then, as later, usury laws could be evaded by various legal expedients. These changes were yet more marked in the sixteenth century; to the effect of gradual progress was added that of the enormous stimulation of men's minds by the great events of the later fifteenth century, *e.g.* the gradual diffusion of learning, consequent on the fall of Constantinople, the Reformation, the invention of printing, and the great geographical discoveries.

7. The results of these new factors were very great.

**Reaction
against
Canonists.**

Protestantism helped to bring religion into daily life, and men's outlook on economic questions was thereby affected; particularly was the idea of personal and national freedom developed, although the effects of the new ideas were not immediately apparent. The sixteenth century witnessed violent conflicts for economic supremacy, for those enterprising spirits who stood to gain from the new knowledge and resources were hampered by the gild restrictions and repressive laws which had done valuable service in a simpler age. New foreign commodities were available in exchange for home products; new and extensive markets were opened to which English goods could be exported in large quantities; large stocks of gold and silver bullion came into the country from America. The old restrictive gild system could not last; entrepreneurs collected or borrowed capital, and built factories in which they could make those goods which they could not manufacture in the privileged towns; the gilds lost control of industry because men who controlled

capital could make commodities outside the boundaries of the towns. The guilds lost control also over prices; the great changes in demand and supply made the old artificial prices impracticable.

8. Thus the irritation against the old restrictions on usury, on speculation, and on economic freedom of all kinds became more acute, but at the same time a new school of economists appeared who demanded restrictions of another sort. The old mediaeval theories were becoming thoroughly discredited, and money was now considered to be the vital factor in national Economy. The early Mercantilists, or rather the cruder Bullionists who preceded them, started from the assumption that when an exchange took place, one side gained and the other lost; thus it was the aim of English merchants so to carry out foreign trade that money was brought into the country. The "Balance of Bargain" exponents held that each single transaction should show a balance of precious metal due to the home country; those who upheld the "Balance of Trade" theory believed that the national aim ought rather to be that total exports should be greater than total imports, so that a balance of gold and silver was due to the country concerned; they held that it might be admissible to export gold in respect to certain individual bargains, in the hope that by this means, export might be stimulated.

9. This bullion policy was characteristic of the general ideas underlying what is known as Mercantilism. **Mercantilism.** this name stands rather for a series of practical precepts than for a deliberate and carefully thought out theory. Mercantilism may be best described as the expression of nationalism in economic life; it was not confined to this country, but all important States were to a greater or less extent influenced by

the same ideas; not until after the middle of the eighteenth century did mercantilist doctrines finally lose their hold.

In the seventeenth century, Mercantilism was the ruling principle in the administration of Cromwell, and in France, in the reign of Louis XIV., especially when the great minister Colbert was in power. The Prussian king Frederick William I. also pursued an aggressively national policy, while the raids of Frederick the Great were inspired partly by economic motives. Mercantilism seems to be bound up with the existence of strong centralised States, though the example of Cromwell shows that monarchy was not a necessary ingredient of Mercantilism; a strong monarchy, however, favoured the development of a centralised administration, and made it easier to carry out a national policy.

The economic side of Mercantilism was concerned mainly with money questions. The price changes consequent on the discovery of precious metals in America had concentrated attention on monetary problems. Warfare, again, demanded large sums of metallic money, mainly for soldiers' pay; the nation which possessed large stocks of gold and silver could build up and retain a large army.

The Mercantilists worked on the assumption that a government could deliberately guide and control the economic life of a nation. As welfare appeared to be so closely bound up with the possession of large hoards of money, it is comprehensible that the statesmen of the seventeenth century autocracies should aim at the acquisition of such hoards. It is not necessary to suppose that the statesmen of this period really believed that money was synonymous with wealth, though there was much loose thinking in this connection; economic conditions were so far different from those of to-day that there is a danger of

reading these times in the light of modern conditions ; in those times, a national hoard might be almost a necessity

10. The aim of statesmen was to obtain a favourable balance, *i.e.* to attract gold into the country. The later Mercantilists believed that such a balance might be best obtained by indirect means, which might involve temporary inconvenience or loss. First, they saw that if exports were to be stimulated, it would be advisable (if possible), to develop industries, and men like Colbert had few doubts that the State could guide industry efficiently into beneficial channels. Thus, industries were aided by means of patents, bounties, and other means ; the new manufacturers gained at the expense of the taxpayer, but it was believed that the nation as a whole would benefit by such artificial stimulation of trade. It seemed plain to the Mercantilists that if more goods were exported, money would be attracted to the country in payment. This attitude is the more pardonable in that the old mercantilist fallacies have not disappeared even yet from common thought.

It was also believed that a large population was to be desired, and European States desired a large increase in numbers, not only for its beneficial effect on industry, but also because a large working-class population provided a reservoir from which supplies of soldiers might be drawn ; the essentially national character of Mercantilism must never be forgotten. Men believed that a successful war had very beneficial effects on trade, especially where there was the possibility of controlling rich lands in the New World.

11. On the other hand, the Mercantilists tried to obtain a favourable balance by checking imports, especially of manufactured goods ; often, however, there was no such check on raw materials, and their export might even be regarded with

**National
Feeling.**

disfavour. Foreign manufactured goods were either prohibited altogether, or else were subject to duties, the intention of which was to stimulate the home industries. The nation was regarded as a unit, and the aim of statesmen was to develop material resources so as to further the interests of an increasing population. Often it was tacitly assumed that the gain of one nation must mean the loss of another; thus the earth was regarded as a store of undeveloped resources, and a nation struggled to obtain the facilities for developing its manufactures to the fullest extent. National feeling was the mainspring of Mercantilism; the bullion regulations represented only one side of the developed doctrine; it is probable that the later Mercantilists recognised that money and welfare were not the same, but they thought rather that an inflow of bullion was an index of prosperity. Their mistake lay in the non-recognition of the fact that total imports must balance total exports; they believed that the import of bullion represented a national gain.

12. The fallacies of the Balance of Bargain School were exposed by Thomas Mun, in the early seventeenth century. He defended the East Indian trade, believing it to bring bullion into the country; he supposed that commerce brought more money into the country than it took out, i.e. that England's foreign trade was responsible for a favourable balance. He may be considered as the first of the newer English school of Mercantilists. Contemporary with him was the Italian Serra, who also believed that gold and silver were brought into the country by trade and industry; he opposed the excessive restrictions on export of bullion, believing it to be more beneficial in the long run that commerce should be stimulated, and the manufactures of the home country be exchanged for foreign goods. Later

**Mun and
the later
Mercantilists.**

in the century their ideas were developed by Child, Davenant, and Temple in England, by Becher in Germany, and later still by Melon in France. Sir William Petty requires special mention, for in his *Political Arithmetic* he uses statistical methods in economic problems, continuing to publish treatises in the early eighteenth century. Perhaps the weightiest English mercantilist writer was James Steuart; only nine years before the publication of the *Wealth of Nations*, he published what was probably the best account of Political Economy that has been written from the Mercantilist standpoint.

13. The Mercantilist theories could not long survive the destruction of the old gild system of **Natural Law**. industry and its effective replacement by the capitalistic system. Even in the sixteenth century, there were thinkers whose conclusions tended away from the ideal of nationalism, and in the next century, a group of thinkers arose who were to stimulate economic thought. In the sixteenth century the Frenchman, Bodin, was among the group of philosophers who believed in the existence of Natural Law. The new school considered that there was a divinely ordained method of government, and that man in himself possessed the power of penetrating Nature's secrets by reasoning, or, as Bacon and his followers thought, by experiment and observation. Bodin may be considered to some extent a forerunner of the Mercantilist school, for he believed that a strong central power was a condition of good government.

Sir Thomas More was a forerunner of another school, and he will be considered later. Hobbes, and more particularly Locke, were other Englishmen who, in the later seventeenth century, propounded theories which paved the way for new ideas of freedom. It was in France, however, that the first serious and effective onslaughts on the pre-

vailing Mercantilism took place, and the new enthusiasm for freedom was as much a result of dissatisfaction with mercantilist abuses as of philosophic influence. Bois-guillebert and Marshall Vauban severely criticised the existing system, and suggested remedies; these men were the forerunners of the remarkable group of French economists known as the Physiocrats.

14. Although the Physiocrats represented a great advance in economic thought, their characteristic theories may be traced largely to a process of reaction against Mercantilism. The especial attention paid to trade and manufacture tended to sacrifice the interests of the farming classes; the restrictions against export of food and raw materials seemed too large a price to pay for possible benefits to industry. Again, the conception of a national Economy, guided by a single central authority, implied an excessive interference with men's habits; it seemed that landlords, and particularly peasants, were being exploited, and the newer school of thought considered that the sacrifices made by the agricultural classes were not compensated by industrial progress.

The Physiocrats went further, and attacked the basal assumptions on which mercantilist theory had been reared. They began to argue that not only was State interference a mistake, but that it was actually harmful; they believed that industry would best develop if left to itself; they originated the famous expression "Laissez faire, laissez passer" which may be translated, "Let (industry) alone, let (goods) be transported (from place to place without obstacles being placed in the way)." They argued that the defects of Mercantilism were due largely to an attempted interference with natural laws, and that welfare would be advanced if artificial obstacles to the working of such laws were removed. The name Physiocrat, used by Dupont de

Nemours (1768) means "Rule of Nature." Locke, in England, had worked on similar lines, but the French economists derived their main intellectual stimulus from the Stoic philosophers, who in Roman times had shown preference for agriculture.

The philosophical basis of the new doctrine, as of that of Adam Smith, was the opinion that all men have the same "natural rights" and should follow their natural bent, without interference, so far as their actions do not interfere with the rights of other men; government is necessary only so far as it protects life and property, and enforces contracts freely made. These ideas would reduce State action to a minimum; Mercantilism wished to extend State control.

The Physiocrats flourished about the middle of the eighteenth century; Quesnay, the physician of Louis XV., was their leader. Impressed by the immense contrast between the state of the nobles and the peasants, he concluded that only the peasant was productive, and only agriculture gave a "produit net," or surplus; the magnificence of the aristocrats was built up on the productivity of the soil. He believed that industry gave no surplus, but that manufacture increased the value of raw materials only by the amount of labour used in transformation into new forms; he considered manufacture to be "unproductive." It followed that all taxes must, sooner or later, be paid out of the agricultural surplus, and therefore it would be advisable to levy a single tax, that on land. He saw that if money was artificially kept in the country, the only effect would be to raise prices, and the country would contain no more real wealth than before. Like the other Physiocrats, he was opposed to State interference in industry.

Gournay did not share Quesnay's exclusive preference

for agriculture; he had a deeper knowledge of commerce, and recognised that the exchange of commodities added to the sum of human satisfactions; thus he did not accept the opinion of Quesnay that agriculture alone gave a surplus. In respect to freedom of production and exchange, he agreed with Quesnay and the other Physiocrats, *e.g.* Dupont de Nemours and the elder Mirabeau.

15. Turgot shared the enlightened views of the Physiocrats, but did not follow them in their one-sided ideas; he was a great statesman as well as an economist, and in addition, his writings were clear and well-written. He was the greatest economist of the group; although he has no direct influence at the present day, his name is important because of the influence exerted by him on Adam Smith. In England, Tucker was a contemporary of the Physiocrats, and to some extent shared their views.

Although Adam Smith was largely indebted to the Physiocrats, he made an enormous advance over any previous economic writer. Turgot had sketched a theory of distribution, but Smith developed it; the Physiocrats had realised the importance of the removal of restraints, but Smith was the first to give a clear and complete account of the disadvantages of Mercantilism. Again, Smith owed much to certain English writers, particularly Hume, but the influence of Smith on economic science is far greater than that of Hume.

16. Hume had made a powerful attack on Mercantilism, but was never able completely to free himself from the old ideas. He recognised, however, that money was only a means of expediting business, that it was not the same as wealth, but made the production and exchange of wealth easier. He recognised also the fact of which Smith made such great use, that commerce

merely represents the international division of labour, and that the same advantages will accrue from it as are found in the working of division of labour in production. He also showed that the interest on money was not determined by the amount of metallic money in the country.

17. Hume represented the transition between the en-
Adam Smith lightened Mercantilists and Adam Smith,
 (1723 90). but was only one of the sources from which
 Smith drew inspiration. Perhaps the most arresting fact
 in connection with Smith is his marvellous breadth, sanity,
 and balance. He was a Scotch professor who had some
 knowledge of business conditions, was in touch with the
 economic writings of his predecessors and contemporaries,
 and had lived in France, in close contact with the Physio-
 crats. In addition, he was a man of great natural ability,
 with powers of keen and accurate observation. He had
 also the power of taking other men's opinions and results,
 passing them through his own mind, and using them to
 build up a coherent system of his own. He had at the
 same time exceptional opportunities of collecting infor-
 mation, and an exceptional faculty of assimilation of what
 was good in other men's work. Smith has been accused
 of a lack of originality, for even the philosophical basis on
 which his system rests is partly borrowed from Locke and
 Hobbes, but he showed a true creative spirit in the way
 he built up a new science from a series of disjointed facts
 and theories.

18. The *Wealth of Nations* (1776) remains the most
 important single book on economic subjects
Wealth of which has yet appeared. It is so clearly
Nations. written, it is full of such apposite illus-
 trations of subjects of such universal human interest that
 to-day it may be read with the greatest pleasure, whether
 by the economist or by the general reader. Much of the

book is out-of-date, in that it attacks fallacies which are no longer widely held, but much of it is of permanent interest. His breadth of view is best seen from the fact that both the deductive and the historical schools have, with reason, acclaimed Smith as their master.

The *Wealth of Nations* combines deduction and induction so skilfully, and weaves the doctrines of other men into so coherent a whole that the book gives an impression of unity of thought throughout; only when the work of other men has been studied is it apparent how much Smith owes them. The note of personal freedom is all-pervading, as is that of cosmopolitanism, and it is hard to believe that these doctrines were the outcome of recent thought; yet the ideas of free trade in their modern form originated with the Physiocrats rather than with Smith; his contribution lay in the clearness, the skill, and the thoroughness with which he advocated the new doctrines.

The *Wealth of Nations* treated every branch of economic thought in such a way that later development has taken the form of correction and addition rather than destruction. Out of a mass of irrelevant or obsolete detail can be sifted the root ideas which form the groundwork of Economics to-day. As regards production, he treats of manufacture under the domestic system, but his remarks are still valuable, while his account of the principle of division of labour has become a classic. He practically created the theory of distribution; out of the hints of the Physiocrats he developed a body of doctrine. In exchange, he followed in the steps of the French economists. Perhaps he was most successful in his theory of value; he showed clearly that the value of commodities was dependent on demand and on supply, and hence analysed the phenomena of markets; he also showed that the value of commodities tended to be equal to the labour

cost. He tried to analyse the term "value," but made a distinction between value in use and value in exchange, thus stating a problem which was cleared up only at a much later date. Here, as often, Smith is unsatisfying to a modern reader, but his statements are incomplete rather than inaccurate.

Smith seems to have had glimpses of the Ricardian doctrine of rent, but appears to contradict himself in different parts of the book. His analysis of rent is not always clear, and Hume seemed to have a more accurate conception of this subject; thus he says explicitly that rent is not a part of the price of produce. Smith is more directly at variance with modern doctrine in his teaching concerning productive labour. Though he rejected Quesnay's opinion that agriculture alone is productive, he merely sought to extend the use of the term "productive"; he argued that some classes, *e.g.* domestic servants, were unproductive.

His account of the principles of taxation are of permanent value; his famous canons have been extended or limited, but they remain an inspiration to later students; they form the basis of every good fiscal system. He laid stress on this subject because he had to take serious account of the activities of government; Adam Smith lived in a time when Mercantilism was a practical reality.

Smith was not the creator of Political Economy, and this for two reasons; first, most of his work is inspired by earlier writings, and again, the *Wealth of Nations* is not a treatise on Economics in the modern sense. Smith's economic theories are so bound up with his philosophical opinions that they cannot be separated; the *Wealth of Nations* is not an abstraction, dealing solely with economic phenomena, but rather a view of life which surveys a wide range of human experience; *e.g.* Smith's use of history is

so apt, that his book is read with pleasure by many who disagree with the deductive school which followed him.

Smith did not cut himself loose completely from the Mercantilists. In spite of his defence of Free Trade, he favoured the Navigation Laws, on the ground that national defence was preferable to riches ("defence is of much more importance than opulence"). His cosmopolitanism is tempered by national feeling; again, his belief in personal freedom is often qualified; *e.g.* he advocated a rate of interest which should be only a little above the lowest market rate. In spite of these anomalies, his work consisted mainly in the destruction of the old system; Smith, more than any other single man, hastened the fall of Mercantilism.

19. Thus Adam Smith has been severely criticised by those who have believed in the efficacy of "Smithianismus." State intervention. In particular, German economists have attacked "Smithianismus," meaning thereby the policy of non-intervention which Smith favoured; it is true that his theory was largely negative, but he lived at a time when the overthrow of an outworn system of State restriction was essential to progress; we cannot predict what would have been his opinions had he lived in a different age; it is not likely that his views on State control of industry would have been quite the same had he seen the later abuses of factory life. Again, he was criticised for his view of man as essentially self-seeking, and for the assumption that selfishness was the mainspring of economic activity. It is true that he often wrote as if there were a "Scotchman inside every man," but he continually shows his appreciation of motives other than money-making. There may be more real truth in the charge of materialism, and yet he believed that men's actions were guided by an "Invisible Hand." Lastly, he was

accused of making his conclusions too absolute, but it may be urged on the contrary that his balance and good sense have won him the esteem of all classes of economists. As an influence on economic thought and on economic conduct, Adam Smith has hardly a rival.

Smith gave a new direction to Political Economy. There was no other great economist till the next century; economists were on the whole content to follow his lead; Lauderdale made useful criticisms, while men like Arthur Young and Eden did notable descriptive work. Bentham, however, though not himself an economist in the proper sense, had a greater influence on economic thought. Bentham attacked the old conception of usury, and by his powerful writing helped to abolish the laws in restraint of interest. He was the founder of the "utilitarian" school; his motto was the "greatest happiness of the greatest number." His ideas provided the philosophical basis for the work of the Manchester School of the early nineteenth century.

20. Malthus stands a little apart from the direct line of development, though his theories, which Malthus (1766-1834). had important consequences, are best understood in relation to contemporary economic conditions. The gild system had completely disappeared, and men were now herded in factories; cheap labour was abundant, and large manufacturers made high profits. Population was rapidly increasing, partly owing to a bad Poor Law system. The Industrial Revolution had brought misery to large classes. Thus many thinkers began to assail the mercantilist doctrine of the necessity of a large population. In the new century, the Benthamite economists were strongly influenced by Malthus' doctrine of population.

In the meantime, Smith's influence spread abroad; his

chief follower was the French economist Say. Not till 1817 was published the book which for many years influenced economic thought in England; Ricardo derived much of his inspiration from Smith, but his *Principles of Political Economy and Taxation* was the work of a man of great originality. Ricardo had already published a pamphlet on *The High Price of Bullion*, in which he showed that the rise of prices was due to an over-issue of inconvertible notes, and he was the leading economist in the country.

21. Ricardo was of Jewish blood, and had the national aptitude for money dealings; in addition, Ricardo (1772-1823). he had a mind of marvellous analytical power. His reasoning was faultless, even in the most complicated problems; he had read the *Wealth of Nations*, and from it had derived certain fundamental ideas and, using these as a basis, he reared up a structure of economic thought which dominated English Political Economy for half a century. He was an extreme exponent of the hypothetical method; whether or not he realised it, the human beings of which he treats are not representative of common humanity. He tacitly assumed that men are swayed by motives of pure self-interest, and that money is the only spur to economic effort. His simple assumptions allowed him to proceed from one conclusion to another with the certainty of a mathematical problem.

His method was very fertile, while his assumptions were almost true in respect to the men whom he knew best, i.e. stockbrokers. Thus his theory of money is of permanent value. Again, he developed the theory of distribution. His work on Rent was of the greatest importance; it was not quite new, for Ricardo himself acknowledged indebtedness to Malthus and also to West,

while we now know that Anderson had propounded a similar theory forty years before; men like Hume also had a glimpse of the true explanation of rent. Ricardo, however, first put the law of rent in a clear and unambiguous form, ready to serve as a basis for further theoretical progress. He also showed the true nature of profits; to Adam Smith, a manufacturer was not a large employer of labour; his earnings were settled by the same laws as were the wages of labour; Ricardo recognised that wages and profits were antagonistic; for a given product, an increase of wages meant normally a diminution of profits.

Ricardo is associated particularly with his supposed "iron law" of wages, and with his "cost of production" theory of value. He has been severely criticised in respect to both these theories, but a perusal of his work leads one to conclude that in his own mind there was a more complete understanding of his subject than is apparent; the *Principles* is not a treatise, but a series of notes, and Ricardo shows by certain almost casual statements that he realises the limitations of his arguments. Thus, he expressly mentions the importance of demand in relation to value, as also he shows that the iron law is not inevitable, but is dependent on the standard of living. His extremest critics took his work too literally. Ricardo's mistake lay simply in over-estimating the forces of self-interest and free competition; read with due caution, his work is still of considerable direct value to students.

Ricardo sympathised with the working classes, but he had no personal knowledge of them, and the human touch is lacking in his writings. His work inspired the Benthamite group, and economists appeared who copied Ricardo's apparent inhumanity, but who did not always possess his ability or his real feeling for the lower classes.

The new Political Economy developed, and gradually became an instrument for the further suppression of the working classes. The iron law began to be considered as almost a law of Nature, and free competition became a fetish. Thus the rich manufacturers quoted Political Economy in opposing the Factory Acts and labour combinations. Political Economy became the "dismal science."

22. Senior was a leading economist of the early nineteenth century; his work is suggestive and original, though he followed Ricardo in the main. James Mill and McCulloch developed the Ricardian doctrine in all its hardness and clearness, while many second-rate economists helped to form the new deductive school. Political Economy was treated as a body of doctrine which could be immediately applied to actual life; the qualifications which Ricardo probably recognised in his own mind were neglected in the work of his followers.

The Benthamite school did valuable work, for by its rapid advance on the theoretical side it compelled criticism; much of the later history of Economics is taken up with the correction of the Ricardian doctrines by later economists. The groundwork of Political Economy was well laid, but the conclusions reached were stated too absolutely. This English school has been blamed for inhuman crimes committed in its name; even so, its practical influence was on the whole good; probably the system of individualism worked as well as any other system would have done in that difficult time of transition to modern capitalism. The Manchester School, headed by Cobden and Bright, brought about the Repeal of the inhuman Corn Laws in 1846; this great achievement must be credited largely to the work of the "doctrinaire" economists who followed Ricardo,

23. John Stuart Mill was in some ways the last of the Ricardian economists. He was carefully trained by his father, James Mill, and Benthamite influence is obvious in most of his writings. The aim of Mill was to do for the newer Political Economists what Adam Smith had done for the older; to some extent he succeeded, for his *Principles* (1848), was an admirable exposition of contemporary Political Economy, and also contained much valuable historical and descriptive work. His permanent contribution to the subject was, however, small; he was an expositor rather than a pioneer; his new doctrines, e.g. the Wages Fund, have been largely discredited.

Mill was no mere doctrinaire. He was influenced by the philosopher Comte, who proposed the creation of a new subject, Sociology, which should include Political Economy, and also by his wife, under whose influence he grew more sympathetic towards Socialism. The later part of the *Principles* seems to contradict his earlier work, for he is beginning the definite break away from Ricardo which transformed the subject at a later time. He came to realise that money is not the only economic motive, and his later work showed evidence of deep human feeling.

24. The English Political Economy was well represented abroad. In France, Say was followed by Dunoyer; Cournot was a brilliant and original thinker, who called in the aid of the higher mathematics to his deductive reasonings. In Germany, Hermann developed the ideas of Smith. Von Thünen was a remarkable man; he used the extreme deductive method, imagining the case of an isolated State. He was a discoverer of the modern "marginal" theory of interest, for he noted

Foreign
Representatives
of Classical
School.

that interest was fixed by the payment made to the last unit of capital put into use.

25. The Benthamite school was assailed from two sides.

**Criticisms of
Classical
School.**

Some socialists pretended to derive inspiration from Ricardo, but in the main, the socialists were bitter opponents of "Political

Economy," which had in truth become an ally of the rich manufacturers. On the other hand, the method of the prevailing school was attacked by the newer inductive economists. After Mill, the three tendencies are clearly seen; there is the newer deductive school, usually less dogmatic than the old, represented by Cairnes, Bagehot, Jevons, Fawcett, Sidgwick, and Dr. Marshall in England, by Bastiat, Gide, Colson, Leroy-Beaulieu, and Guyot in France, and by the Austrian School; there are the socialists, and lastly the inductive or historical school, represented by Leslie in England, and by most prominent German economists. The rise of the last school will be sketched first.

26. Jones was one of the earliest critics of Ricardo, and

**The older
Historical
School
(c. 1840-60).**

he advocated the direct study of facts. The new movement gathered head in Germany; Rau was descriptive rather than analytical.

The first real attack on the classical Political Economy came from the "Old Historical School," the chief names being Roscher, Hildebrand, and Knies. The first was the pioneer of the new methods. He attacked the obvious abuses of the deductive system, and sought to place Political Economy on a historical basis. He retained many of the ideas of Adam Smith; his importance lies in the fact that he opened the way to the new method. In the same decade (the fourth), Hildebrand published his *National Economy*, and List his attack on the English Free-trade individualistic ideas; List believed

in the old mercantilist idea of nationalism; he argued that Germany had more to gain from State action than from a reliance on free competition; in this respect he resembled the American economist Carey.

A little later, Knies emphasised the relativity of economic thought. He showed that the Ricardian theory was approximately true only for certain peoples at a definite stage of culture; the basal assumptions of the English school could not apply to savage communities; hence, Knies combated the implicit claim of Political Economy to represent a body of abstract doctrine of universal application. This group of economists had a great influence in Germany, but did not shake the position of the classical school in England. Tooke and Newmarch in their statistical studies worked on the historical method, and their conclusions helped to prove the contention of the historical school, but their ideas were those of the classical economists.

27. Before continuing this sketch, it is necessary to speak of the development of Socialism. More's "Utopia" (1516). Plato's influence has been mentioned, and More's *Utopia* owes much to it. There is much vague discontent apparent in early English literature, e.g. in *Piers Plowman*, but More elaborates a definite scheme; though it is not always to be taken literally, *Utopia* represents much of the best thought of the time. He attacks the extension of sheep-farming, which was depopulating the countryside: "Certain abbots . . . leave no ground for tillage, they inclose all into pastures: they throw down houses: they pluck down towns, and leave nothing standing, but only the church to be made a sheep-house." He pictures an imaginary island, in which affairs of life are well ordered.

In *Utopia* there is compulsory labour, so that all may

have leisure, wisely spent in obtaining the higher pleasures. Labour is largely agricultural, and corn not consumed is exported. Money is little esteemed, and used only for paying mercenaries. There is no private property, as goods are held in common, while houses are changed by lot periodically. Thrift is encouraged, and population is controlled by the State. More's ideas reach back to the Greeks and the Stoics, and forward to the present; they are to-day a stimulus to thought, though many have been incorporated in later history.

28. In the later eighteenth century, Rousseau propounded his theories of the equality of men; he blamed the institution of private property for the existence of inequalities. His ideas will not bear detailed criticism, but they represent a new spirit which had immense influence on thinkers; Rousseau was an idealist, whose importance depends on his influence rather than on the practical execution of his ideas; Rousseau made a failure of his life, but his wild opinions contained ideas of priceless human worth. Under his influence, in England, Godwin preached the doctrine that mankind could be perfected by the preaching of virtue; by this means, economic evils like poverty would be eliminated.

29. In Austria, in the early nineteenth century, Fichte published a volume in which he held that the State was responsible that every man should have the same right to sustenance, on condition that he should work; he who would not work, had no right to eat. He concluded that this aim was possible in an isolated State, in which luxury could be suppressed as long as there was actual want.

The next names are Sismondi, St. Simon, and Fourier in France, with Robert Owen in England. Sismondi was

not so much a socialist as a humanitarian critic of individualism; he held that free competition favoured the strong at the expense of the weak, and that it was the duty of the State to redress the balance. St. Simon was surrounded by a group of men whose doctrine was the "New Christianity"; they believed that the spread of brotherly love would solve all economic problems, and that competition would no longer be the controlling economic factor. Fourier also believed that a recasting of Christian ideas was necessary, and that competition should be replaced by co-operation. He proposed that men should be grouped in companies of nearly 2,000 persons, which should be autonomous; each such "phalange" should live in a single building, the "phalanstere," with land attached. Every man was to choose his employment, and to receive a minimum remuneration; the remaining wealth should be divided in the proportion of five parts to labour, four to capital, and three to special talent. His follower, Considérant, tried to put his ideas into practice, without permanent success.

30. Robert Owen has some claim to be called the **Robert Owen** founder of English socialism; he was a (1771-1858). strange mixture of practical ability and impracticable idealism. At his New Lanark factory he showed that it was possible to treat his workpeople well, and yet to run his business successfully. He wished to persuade other millowners to follow his example, but found that it was necessary to press for State control of factories. Largely through his efforts, Factory Acts were passed, though they were disappointing in their scope. His *New View of Society* was published in 1812, and his *New Moral World* in 1820.

Owen believed that man was largely a product of environment. Hence he laid great stress on education; all

men should be educated, if necessary by the State, and then should be free to follow their inclinations, except that all men should be obliged to work, and have the right to work; every man's place in the economic organism should be determined by capacity. Owen believed that by careful organisation, production would so increase that want would disappear. His own attempts at creating ideal communities ended in failure, but his ideas have been a stimulus to later generations.

Owen's influence has been particularly noticeable in respect to trade unionism and co-operation. The present success of co-operative distribution and, to a less extent, of production, is largely traceable to Owen's ideas. The "Rochdale pioneers" put co-operative trading into practice (1844), but Owen was the inspirer of the ideas which led to this development.

William Thompson had less practical influence. He believed that value was due to labour alone, so that there was no justification for rent and interest.

The Christian Socialists were cultured men who believed that Christianity could be applied to solve economic problems. They saw that religion was doing little to lighten the burdens of the poorer classes, and looked for their removal to the growth of a new spirit in society; they believed that Christian principles could be so far put into practice as to remove prominent abuses. The chief exponents were Maurice and Kingsley (middle of century) and, later, Thomas Hughes.

Carlyle was no socialist, but is notable for his incisive attacks on the Benthamite school; with biting sarcasm he points out the shortcomings of the classical Political Economy, though he fails to realise its essential truths, and provides no alternative doctrine which can be put into practice. The same criticism can be made concerning

Ruskin who, in the succeeding period (after Mill) attempted to restate Political Economy on a basis which should take account of the moral nature of satisfactions. Carlyle and Ruskin had a permanent influence because of their inspiration on later thought.

French Socialism. 31. In France, a different type of Socialism became very prominent towards the end of this period; in 1848, after the fall of Louis Philippe, national workshops were set up, largely through the instrumentality of Louis Blanc. Unlike the earlier idealists, he represented the Socialist agitator, and had a far greater influence than they on the working classes. He started from the idea that every man had a right to work, and his doctrines were enthusiastically received by the masses, Socialism obtained a firm hold on the town artisans. Blanc believed that money should be advanced to communal workshops by the State, and so it was necessary that the lower classes should obtain power; when the workshops came into being, they were to extend their influence so that they should finally control the whole of the nation's production. He did not approve of the particular application of his principles in 1848, and the scheme was a failure, as the existing government meant it to be. As everyone had the "right to work" in the workshops at a fixed wage, the system degenerated into a form of Poor Relief.

Proudhon, his contemporary, criticised society from another angle; he was somewhat of an anarchist, arguing that states should be replaced by smaller groups in which enforcement of contracts should be the main work of the ruling power. Money and interest should disappear, and capital should be supplied by communal banks. Economic life should be based on a system of free contracts between individuals. The sketch of the further

development of Socialism will be postponed until we have completed our general survey.

32. The deductive school remained important in England long after Mill's *Principles* was published. Cairnes (1823-75) and Leslie Fawcett represented the orthodox standpoint, (1827-82). but Mill's broader outlook was reflected in men like Bagehot, who softened down the hardness of the Ricardian economists, while accepting their principles. His financial work was particularly valuable; *Lombard Street* (1873) has become a classic. He combined analytical ability with historical knowledge.

Cairnes was a narrower adherent of the deductive school: his theory of non-competing groups is noticeable. His opponent was Cliffe Leslie, a representative of the German historical school. He fought the same battle in England as did Roscher and Knies in Germany; here, the effective attack on the deductive method was delayed till Leslie's time, and the deductive method has never been quite overshadowed, as it has in Germany. None the less, the tendency during the last seventy years has been towards a more realistic method; partisans like Leslie and Ingram may have been partly responsible for this, but the movement towards inductive methods was inevitable. Invaluable descriptive work like that of Thorold Rogers (*e.g. Economic Interpretation of History*) was independent of theories of economic method, and the same may be said of the historical work of Toynbee and Cunningham. More and more it is plain that deduction and induction must work hand in hand; *e.g.* modern induction owes much to the statistical methods employed by Jevons, a brilliant deductive economist. Statistics plays an increasingly important part in the mass of valuable descriptive writings which are representing English contributions to Economics.

33. The most remarkable and original deductive work done in England after Ricardo was that of **Jevons** (1835-82). Stanley Jevons. Early he concluded that the older economists had paid too much attention to production, and had neglected consumption. Hence it was that difficulties seemed sometimes to be slurred over in the writings of Adam Smith and Ricardo. In particular, the distinction between value in use and value in exchange was unsatisfying, while Ricardo's doctrine of Cost of Production seemed to be positively fallacious. Jevons studied consumption from the standpoint of the individual, using the terminology of the higher mathematics. He concluded that there was an important distinction between total utility and final utility, and that its recognition was necessary to the study of Economics. After writing preliminary essays, he published his *Theory of Political Economy* in 1871.

34. Jevons' ideas were not immediately accepted, but it was found that a French economist, Walras, **Walras and the Austrian School.** had arrived at the same conclusions by similar mathematical methods. In the same year (1871) the Austrian, Menger, brought out his *Principles*; he came to similar conclusions from the psychological standpoint. The "marginal" method in Economics now compelled attention. Similar ideas were found in Cournot and von Thünen, as well as in forgotten economists like the Frenchman, Dupuit, and the German, Gossen.

The marginal method has transformed Economics; often it merely stresses what the classical school had slipped over, but it has completed and widened the old ideas. Of living economists, Dr. Marshall may be noticed as a thinker who has woven together the ideas of the Benthamites and of the historical school, using the marginal method as a

powerful instrument in furthering economic research. The present English school of Economics strives, not without success, to hold the balance between deduction and induction.

In Austria, Menger's work was followed up by that of Böhm-Bawerk, Wieser, and Philippovich. In other countries, among adherents of this newer deductive school of Jevons and Menger may be mentioned Walker, Fisher, and Seligman in America, Pierson in Holland, and Pantaleoni in Italy. In France, Gide and Leroy-Beaulieu belong to the newer deductive rather than to the German school; they lean towards Free Trade and individualism, following the lead of Bastiat, who in 1850 published his *Economic Harmony*, which in the true individualistic manner presented the thesis that the free interplay of economic forces leads to a harmonious social organisation.

35. The German economists have in the main relied on observation rather than reasoning. Schmoller, Wagner, Neumann, Cohn, Conrad, and Sombart belong to the newer historical school. While their attitude towards deductive Economics is more accommodating than that of Knies, their descriptive work is none the less valuable, and they have lost the antagonism to Adam Smith which characterised the earlier historical economists.

Our sketch of the development of socialism may be now completed. The direct influence of Blanc on the French working classes was represented in Germany by that of the agitator Lassalle. He formulated the "brazen" (iron) law; while admitting that the position of the workers had improved, he held that wages were far too low. He was a realist rather than a theoretician, and believed in the actual feasibility of a scheme of State control of production; he advocated the loan of public money to productive

**The New
Historical
School.**

associations, which should spread, and replace the existing competitive system.

36. Marx, Rodbertus, and Engels, like Lassalle, were **Karl Marx** pessimists, though they derived inspiration (1818-83). from that same "classical" Political Economy which inspired the optimism of Bastiat. In opposition to "Utopian" socialists like Owen and Fourier, they stressed the effect of production and distribution of material goods on welfare; their "historical materialism" led them to a denial of the possibility of quick improvement as a result of schemes which failed to take full account of human nature.

These economists founded the new "scientific socialism." Rodbertus and Marx, like Lassalle, took Ricardo's alleged "iron law" as a starting point, but the two former tried to build up a theoretical system rather than to translate principles into immediate practice. Rodbertus made valuable historical investigations; he concluded that private property was responsible for the workers' lot, and advocated its eventual abolition.

Karl Marx has had a greater permanent influence than either Lassalle or Rodbertus; like the former, he was of Jewish blood. Like Rodbertus, he believed that the lower classes were oppressed because they were robbed of the fruit of their work; labour (and chiefly manual labour), alone gave value to goods; hence the worker was exploited by the capitalist, for wages tended to fall to the minimum required for subsistence; the introduction of machinery was held to increase the number of men without property and hence to increase their misery. The workers should become "class conscious" and look forward to the day when, having "nothing to lose but their chains" they should seize the system of production and distribution. This process would occur inevitably as a result of concentration

of capital into fewer hands, with the subsequent seizure of power by the workers.

The German socialists misunderstood Ricardo; a careful reading of the *Principles* showed that he fully realised the contribution made by brain workers, and by those who "saved" money and thus allowed capital to be employed in industry. Marxism seems to be based on an incomplete economic analysis; its influence, however, is wide and extending.

Socialism has progressed in all countries; Henry George, the American, wrote *Progress and Poverty* (1879), in which he advocated the taxation of land values. All shades of socialistic thought have been represented in England, though Utopianism has little influence. Communism in all its forms, attractive and the reverse, has here given place to Collectivism, intellectually represented by the Fabians. Collectivists believe in the continuous extension of State action; the final aim is to place all production and distribution under the direct control of the State. Guild Socialism, however, represents a reaction against thorough-going Collectivism. As ever, Socialism remains a valuable stimulus to economic thought and action, even when its opinions are most mistaken.

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CHAPTER II.

THE INFLUENCE OF WAR EXPERIENCE ON ECONOMIC THOUGHT.

1. The experiences of the late war provided a severe test of the accuracy of economic doctrine. So far as Economics was an analytical study, its conclusions were continually liable to be upset by new experience; so far as it was realistic, new conditions were liable to make the subject out of date. In point of fact, the essential truth of the commonly accepted doctrines was amply vindicated; deduction and induction had been so carefully woven together that Economics triumphantly survived the test.

This is not to say that the actual march of events was forecasted in its entirety by economists. Prediction is difficult even when an accurate analysis has been made; it is easy to omit essential factors or to over-estimate the importance of others. It is true, however, that the actual economic phenomena have been satisfactorily explained by familiar laws; where difficulties remain, they present confident hope of ultimate solution.

The broader economic results have often impressed common opinion as phenomena of a new type, but the economist has had no difficulty in explaining them. Soaring prices and wages, scarcity, and profiteering do not

represent new forces, but rather the old forces working under new conditions. The foundation of Economics remains untouched. The new experiences have stimulated economic work in two main directions, in respect to a deeper study of monetary theory, and again to the possibilities of the wise limitation of free competition. The work already done in these departments was not erroneous but incomplete; special circumstances have led to the stressing of certain particular points. Economists of an earlier age have had to economise mental energy and to avoid questions which formerly had only an academic interest; certain facts have now been forced to the foreground, and demand an explanation.

In this sketch, more attention must be given to the broader experiences of wartime than to those which call for refinements of economic theory. The influence of war is perhaps most obvious, as well as most important, in production. Gradually, the bulk of the young men in belligerent countries was withdrawn from production. Again, a large proportion of the world's labour and capital was transferred from ordinary production to the making of war goods. Many such goods consisted of food, clothing, and other necessities for the soldiers, but they were usually supplied in greater quantity and of higher quality than civilians required.

2. Most of the transferred productive energy was applied in ways which from an ordinary standpoint would be stigmatised as waste; tanks, guns, and explosives give no direct satisfaction to a normal man. Ordinary production suffered in two ways—by the withdrawal of fighting men, and by the transfer of energy of the remainder; the ordinary wants of mankind probably increased somewhat at the same time. These facts alone

**Transference
of Productive
Energy.**

would result in a rise in prices of nearly all goods. Blockades and submarine activities intensified the effect.

The importance of exchange in affecting certain prices was clearly seen in the case of sugar in England, who had been largely dependent on Germany and Northern France; when these sources of supply were closed, England had to rely largely on the West Indies for sugar, and the price rose enormously. The price-raising effect of a blockade is not general as in the case of limitation of production, for those goods which cannot be exported tend actually to fall in price.

3. The other great price-raising factor was the inflation of currency. Each Government had to spend colossal sums on war goods; producers had to be tempted by high prices; the need of belligerents was so great and so obvious that producers obtained very favourable terms. Again, as Governments did not attempt to pay the whole cost of the war from present taxation, but had recourse to loans, money was freely poured out with great recklessness. Huge Government loans were floated in all belligerent countries. Much of the lent money came directly from banks; in other cases, men borrowed money from banks in order to invest in loans. Thus the banks lent far more money than they possessed; they piled up book credits, and their deposits grew to large dimensions, though largely they were without real foundation. Though gold money disappeared, notes were printed in much greater numbers than the gold (or silver, as in France) coins they represented. Thus currency and credit inflation was an important factor in rise of prices.

The European belligerent countries were drained of gold, for neutral countries were loth to accept depreciated notes in payment for commodities. America obtained an enormous stock of gold. England retained a reserve,

though it could not hope to maintain real convertibility of the State Treasury notes; these were theoretically convertible, but it was made illegal to melt down sovereigns or to export gold without permission. Treasury notes underwent real depreciation, and general prices rose, exactly as would be expected from theory. Gold bullion rose in price much less than most commodities, perhaps less than any, but this fact can be explained by monetary theory. In nearly all countries, gold was displaced by paper, so that large quantities were thrown on the market. The supply was the same, but demand fell considerably; thus the price of gold, measured in terms of goods in general, had to fall. The fall to some extent stimulated the use of gold in the arts, but this effect was not great; the relative fall in the value of gold was shown by the fact that the paper price of gold rose much less than the paper price of other commodities.

A similar, but very slow movement of prices had taken place in the decade before the war; possibly the strikes so common in this period were partly to be explained by the fact that wages were rising less quickly than general prices; the cause of the rise was partly the increased demand for or decreased supply of certain very important commodities, especially bacon, eggs, and some other food-stuffs. After 1914, however, the rise in prices was sensational.

4. The popular explanation of the rise of prices was **Profiteering.** that of profiteering, or the greedy action of immoral traders. No doubt there was in all belligerent countries a class of selfish, callous traders who were quick to turn the social misfortunes to their private advantage. Though the profiteers might be justly censured on moral grounds, it seems plain that profiteering was not in itself an important cause of high prices; perhaps its effect in raising prices was negligible. Pro-

fiteers had traded with equal selfishness in other days; profiteering was merely a form of the self interest which in normal times is an effective factor of economic stability.

The actual process of price-raising was correctly visualised as the "vicious circle"; the mistake made was in supposing that by its means prices could soar indefinitely. The same forces were at work in pre-war days, when every man tried to raise the price of the commodity he supplied, and yet prices were fairly stable. The vicious circle could work in wartime only because a currency inflation was in process. Consumers saw clearly the effects in a small network of a huge vicious circle; a man obtained higher wages, but as other men also obtained them there was more money to spend at the shops, and shop goods became dearer; the man's wages were still insufficient, they rose again, and so on.

This continuous rise was possible only because the Government (say in England) was continuously inflating the currency, or causing bank credits to be increased as it floated new loans. The larger vicious circle was as follows; the Government had to tempt munition manufacturers (say) by high prices for shells. The producers had difficulty in obtaining labour of the right quality and quantity, even when the reserve of women's labour was drawn upon; wages rose, consumers' goods rose in price, and finally every article tended to rise in value. The costs of the producers rose, and profits were no longer tempting enough; the State had again to pay higher prices for shells, and so on.

Thus profiteering and the vicious circle were merely the means by which the money and currency inflations were translated into terms of rising prices. While the moral indignation against profiteers was, on the whole, justified, these men were not leveraging up prices so much as taking advantage of the opportunities given them by inflation.

5. The Government could first use up the gold in the existing currency; it could then replace the gold sovereigns by an equivalent amount of notes; after this point, further issue would tend to raise prices; probably, however, the rise in prices was due rather to increase in bank credits than to excessive note issue, though bank credits seem to have kept some relation to note issue. During all this time, the Bank of England notes were issued under pre-war conditions, except that there was a temporary excess fiduciary issue of about three millions at the beginning of the war. To-day, these notes are issued against gold, except for the amount of fiduciary issue permitted by the Bank Act.¹

6. The social effect of this process was thoroughly vicious. Production of armaments was no doubt stimulated, but the effect on distribution was calamitous. The poorer classes were certainly better off relatively, but this was due to the shortage of labour; the poor gained rather by the cessation of unemployment and under employment than by a rise in money wages. Those whose income lagged behind general prices suffered great hardship; the trades directly dependent on the State prospered, for they were nearest the source of inflation. On the one hand was want, directly due to price changes; even worse, perhaps, was the concentration on the other hand of the new wealth into the hands of greedy men or of men who were incapable of rightly using their suddenly gotten wealth. At a time when the real wealth of the country was enormously lessened, there was an orgy of extravagance based on an illusory rise in money wages.

¹ See p. 421.

The full force of price change fell on those whose money incomes were constant. The huge amounts of food and clothing required by the forces was a cause in the raising of the prices of these goods above even the new normal. The demand for food increased, and American producers reaped a harvest. There was no hope of ultimate improvement, for a larger supply of food could be obtained only under diminishing return. The "new poor" found their real income halved, while the real (not simply money) price of necessities was increased; thus a serious lowering of the standard of living occurred. England escaped more easily than most belligerents; it could sell foreign securities, and obtain loans from America.

7. The standard of living of the whole people was lowered more subtly. Some foreign products were practically unobtainable; others, *e.g.* sugar, were to be had only in small quantities. Substitutes became the rule, *e.g.* margarine for butter. The real lowering of the standard was perhaps best seen in a gradual lowering in the quality of nearly all goods; even soldiers supplied, on the whole, with materials of good quality, could not fail to notice the gradual depreciation in preserved meat, jam, clothing, etc. It is this depreciation which makes it so difficult to obtain a comparison between the standard of living (say) of 1914 and 1918.

Governments tried to avoid the worst evils. In Germany, the problem was faced very early. The difficulties were serious and, in addition, the Germans were naturally amenable to State control. Thus a system of rationing was instituted, and all the European belligerent Governments followed suit. Rationing is based on the idea that demand and supply is an unsatisfactory regulator of the value of necessities in times of scarcity.

8. Consider the case of a very poor and a very rich man competing for bread in time of scarcity.

The case for Food Control. The "utility" of bread will probably be much higher for the poor man than for the other. The seller, however, considers only the money offered for the bread. Now the "utility" of money is very high to the poor man, very low to the other. Thus, if the poor man is practically starving, he may be able to offer sixpence for a loaf; if, however, the other man feels the slightest desire for more bread, he will offer much more than sixpence. Hence, if demand and supply are left to regulate value, the whole of the available food supply may be taken to supply the lesser needs of richer men, while the poor man remains destitute.

There is thus a strong case for control in cases where necessities are present in quantity sufficient for the more pressing needs of all, but not sufficient for the less pressing needs of richer men. This is admitted by men who are quick to see the dangers inherent in State control in ordinary times. Obviously it is not sufficient merely to limit price, for there would still be no guarantee that each person received enough for sustenance; on the other hand, price limitation is advisable, for otherwise a poor man would not be able to buy necessities at the economic price.

9. Our Government succeeded in its immediate object of preventing the rich from obtaining a monopoly of food and other necessities, though the rationing laws were partially evaded. It was necessary to control the supply of a rationed commodity, at least so far as it was imported; the Government tried to restrict the personal consumption of home producers, with partial success. The rationing scheme was carried out by means of registration with shops; it is doubtful if

it would have been successful had not the Government controlled imports.

The system of rationing was applied also in the case of industry. Raw materials were scarce in a time of business opportunity, so that competition for them was great. If the State had not exercised some control, the powerful firms would have obtained the whole available supply of important raw materials, and the other businesses have been ruined.

In the case of munitions and some other important war industries, the State exercised strong control. The price of the commodities was often almost immaterial, provided the goods could be delivered quickly. Thus, partly by agreement with the Trade Unions, partly by pressure, the State overbore those obstacles to quick action which are effective in normal times. The Unions allowed skilled labour to be temporarily "diluted" by unskilled workers and even women. The State also interfered with the internal management of factories in a way which would have been intolerable in normal times. The hold of the State on transport was particularly tight.

The involuntary economic experiments which war has provided should offer invaluable help in solving the problems always present in normal times. Before the war, there were many schemes, socialistic and otherwise, which were believed by their adherents to be inevitable future solutions of social problems. Many of these schemes were actually put into practice during the war. In particular, the effects of State control of production and distribution may be profitably considered.

State control of industry during the war achieved its aim. It is very doubtful whether any system of production depending solely on private enterprise could have proved so efficient. Speed, however, was the main

essential, and to achieve it, incomparable sacrifices were made; the working population worked harder than in normal times. Again, the unlimited control over finance permitted the State to work regardless of expense. Thus the desired aim was obtained at the expense of the health and strength of the population, at the cost of a complete dislocation of our financial system, and left behind a legacy of bitter feeling between different classes which is an important cause of post-war difficulties.

10. The practical question remains as to whether State control of industry is advisable in normal times in normal cases; it is significant that **Control as a General Policy.** peace-time control is, on the whole, fiercely resented by manufacturers and not eagerly welcomed either by labourers or consumers. Yet, the wasteful methods inherent in war-time production are not necessary accompaniments of peace-time bureaucratic control; dishonesty and corruption, however, would always be hard to suppress in such a system. On the whole, the conclusion must be that an attempt to replace the stimulus of private enterprise in a competitive industry should be made with the greatest caution; the general rule seems to hold good that competitive industry should be left alone, except in particular cases where there are good reasons for control. The permanent contribution of bureaucratic method was the introduction of the costings system; the device of estimating cost at each stage of the process is more economical than that of fixing the price of the product so as to cover the cost of the processes as a whole.

Similar considerations hold with regard to rationing and price-fixing of commodities. In peace-time industry, the long view must usually be taken; there is not the same possibility of quickly making a fortune by skilfully taking advantage of rapid changes in the money price of

commodities. In peace time, a fair price is obtained by the slow action of demand and supply. Thus there is not the same need to protect the interests of the consumer. None the less, rationing was so far successful that a future Government will be justified in using the method if at any time there is a serious shortage of an essential commodity, foodstuff or raw material. In normal times, however, the absolute necessities are within the reach of nearly all men.

11. In normal times, again, there is the possibility of compensatory action. If the belligerent States had waited, the prevailing high prices for munitions would in time have called out a sufficient supply, but it was impossible to wait. Again, if food prices had been allowed to soar, in the absence of rationing, food production would, in time, have been stimulated, supplies would have increased, and prices have fallen. The difficulty was too urgent to allow of the waiting for compensatory action. In normal times, excessive prices of particular articles are corrected in this way, though the process may take a considerable time. The best cure for scarcity is a rise of price, for this checks consumption and stimulates production. The necessity of rationing is a sign of social ill-health.

The case of monopolies is very different. War experience has shown that however unwise State interference may be it is at least possible and practicable. It has long been recognised that the very strong arguments against bureaucratic control have least weight in the case of complete or partial monopoly. State control of various monopolies, *e.g.* railways, was inevitable, and the results have been so far favourable that a wise State control of all large monopolies is at least conceivable. It is not certain that State management is always advisable, but

some form of oversight is very desirable. State control of monopolies may well take the form of the fixing of the price of the commodity.

12. The monopolist aims at securing a maximum net revenue. If he cannot do this, it must be remembered that there are in general two prices which will make any particular net revenue lower than the maximum; one of these prices will be above and the other below the price which corresponds to maximum net revenue. The monopolist might prefer the higher price of the two, for it will correspond to a lower production, which he may desire; the public would prefer the lower price; consumers' surplus¹ would be greater in the latter case. Thus it would be a social gain if the price were fixed so low that a large production were made necessary. Even if the monopolist were obtaining the maximum net revenue, it would in general be wise to lower the price; it might be that the monopolist was earning much higher profits than were necessary to tempt him to continue production. Thus, price might be compulsorily lowered by the State so far as to leave the monopolist a fair profit. The economic justification of such action is that consumers' surplus is increased; the moral justification is that the value of a monopoly is a social product. In the case of railways, where the freedom from competition has been given by law, the case for State interference is particularly clear.

13. One effect of the war has been more and more to concentrate the attention of economists on financial matters. The problem of all the European belligerents is to bring back their finances to a sound basis. In England, a great part of the expense of the war was defrayed from taxation during the war, but

¹ See p. 76.

the remainder represented borrowed money, which must be paid by succeeding generations, while the country is less able to bear a financial strain than in 1914. Much of the damage done was temporary; much wastage was compensated by the fact that new workers were drawn in to production, while unproductive consumption diminished through lack of supplies. More permanent harm was done, however, in that England lost much of her stock of gold, and many valuable foreign securities, while the fixed capital of her factories underwent depreciation.

14. England had to borrow depreciated money at high interest; if prices fall to their pre-war level, the burden of debt will be crushing, and England will have to pay back a much greater value than she borrowed; the mere interest on the debt is a large sum, almost equivalent in goods to the pre-war annual national revenue. Thus we are faced with a prospect of high taxation for an indefinite period, becoming more burdensome if prices continue to fall. A way out has been suggested, viz. the Capital Levy. It is proposed that the whole or part of the debt shall be repaid at once by a single forced levy on capital; every man who possessed a certain minimum of wealth would lose a portion of it. As a result, the burdensome interest charges need no longer be paid. It is probable that in the long run the taxpayer would gain in future relief of taxation more than he would lose by the levy.

The effect on industry of such a levy is doubtful; it is the task of the practical economist to decide whether more capital would be lost to industry or sent abroad in this case than in that of high taxation for an indefinite time. In any case, taxes like the super tax show that wealthy men will for a long time have to pay far higher taxes than before the War.

15. The future of international trade is bound up with the question of the exchanges. Paper money displaced gold all over Europe, and thus the exchange rates cannot now be regulated by the transit of bullion; as trade is also still hampered by restrictions, the exchanges are in a chaotic state, for they move within wide limits. The effect on trade is deadening, the risks of loss being serious. If the exchange is against a country, its merchants are at a disadvantage in buying foreign goods, but at an advantage in exporting their own commodities. Thus, the German mark has depreciated much more than the English sovereign; in Germany, however, the mark inspires more confidence than it does in England; thus in England a sovereign will buy more marks than in Germany. Hence a German merchant will not willingly buy English goods, for he will have to change his marks into English money in England; similarly, it will be to his advantage to export goods to England. On the other hand, an English merchant will be content to import goods from Germany, for he can pay in marks, which are of less use to him than to the German merchant; he will not wish to export goods to Germany.

The new conditions have stimulated research on the new problems. There is much controversy, but Cassel's "purchasing power parity" theory may be mentioned. This states that if there is a full and free trade in a certain commodity between two countries then, even if each country has an inconvertible paper currency, a given money unit in either country will purchase exactly the same amount of the commodity in the respective two countries, making allowance, if necessary, for cost of transport. This theory does not apply to commodities

¹ See p. 457.

which are not freely traded. If there is no obstacle to trade, merchants will continue to deal in a particular commodity as long as it is profitable, *i.e.* until its price in the two countries is equivalent.

Suppose there were free trade in clocks between England and Germany, and that a pound note exchanged for 100,000 mark notes. Suppose a certain clock sold for a million marks (*i.e.* £10) in Germany, and for £20 in England. It would then pay merchants to buy clocks in Germany and sell them in England. Clocks would pour into England, and would become so common that their price would fall. The clocks would continue to come until it no longer paid merchants to import them, *i.e.* until they fetched the same price in the two countries.

16. An important practical question is the feasibility of restoring the old metallic currencies, and thus to bring the exchanges back to their old values. It is very doubtful whether it would be wise or even possible to do this quickly: in the interval, trade conditions would be more hopelessly involved than at present. If real convertibility of the sovereign were restored, there might be a considerable fall in prices,¹ partly caused by and partly accompanied by financial depression.

None the less, the gold standard in some form or other is desirable, unless a still better standard based on index numbers (with which the public is beginning to be familiar) is preferred. There are three possible alternatives to the quick return to the gold sovereign. Treasury notes may be gradually called in,¹ and the old conditions reached by a

¹ The extensive unemployment in England during 1921-22 was partly caused by the gradual deflation necessary to bring our finances to their present relatively healthy condition (1/23). The number of Treasury notes outstanding has been greatly reduced.

slow shrinkage of currency; in this way, prices would presumably fall slowly. Secondly, the fact of depreciation may be accepted, and the Treasury notes given a face value corresponding to their real value; in this way, prices would be established at their present level. Lastly, the same result would follow if the sovereign were re-issued at a lower gold content. The question, however, is one of international rather than national importance; suggestions have been made as to the advisability of an international loan, but they have not materialised.

17. The problem of world welfare cannot be solved by economic methods alone. A better state of things will not probably be reached by a return to the conditions of 1914; the new world, when it appears, will be likely to incorporate changes in social structure which, before the war, were considered to be impracticable; above all things, the war taught that the most difficult undertakings can be carried through, and the most unlikely types of organisation be made to "work," if the need arises. World progress to-day depends on political, and above all on moral developments.

None the less, Economics must have a vital part to play in the fashioning of the new order. It speaks as yet with an uncertain voice on many questions in which the human factor is dominant; it gropes towards a solution of many difficult problems in taxation and finance, but as regards problems like Socialism and State action in general, it can as yet give no clear lead. What Economics has the right to say is that, other things being equal, a high rate of production is preferable to a lower one—that increased production is stimulated by everything which makes for the increased mastery over Nature by human intelligence—that development will be retarded by any-

thing which allows neither the free play of competition nor the possibility of amicable co-operation for the common good—that ill-feeling between class and class, between nation and nation, is one of the most effective obstacles to welfare—that equitable distribution of wealth is a problem that has not yet been solved, and that its solution is one of the most pressing needs of the present day—and that every obstacle to full communication between nation and nation should be viewed with disfavour; artificial obstacles should be swept away, and natural obstacles gradually removed as mechanical science develops. Above all, in Economics as in morals, war is the supreme enemy.

CHAPTER III.

THE THEORY OF WANTS.—CONSUMPTION.

1. The life-history of a normal human being is the record of a continuous sense of incompleteness. On the animal plane there are numerous half-instinctive feelings which may be called the primary human **Needs**; such are hunger and thirst. There are other feelings concerned with less vital matters but which are common to man and the higher animals; they may be designated as **Wants**. As man has progressed, his wants have become less instinctive, and more and more have tended to associate themselves with the consideration of definite realisable objects; objects, felt in relation to particular things, may be called **Desires**.

A savage group in a thinly-populated region well stocked with food finds little difficulty in satisfying its primary needs, for nature provides the means of satisfaction of the wants essential to existence. Household Economy, the attempt to adapt means to an economic end, has little place in such a group, and Economics finds scanty material with which to deal. When, however, there is present a limitation of the goods which can satisfy human needs, the concept of Property arises, *i.e.* the appropriation by certain persons of goods which are limited in amount.

Even before the introduction of money those goods worth appropriating would stand out as objects of peculiar interest; to-day, those goods which can satisfy any human wants, primary or not, and which are limited in amount, are those which possess a money price.

2. In a civilised country, the mass of the people is so far removed from hunger that it cannot realise the essential difference between the primary needs and those comforts and luxuries which have appeared as progress has developed, and it is especially to be noticed that from the standpoint of Pure Economics such a distinction is not needed. If the primary wants are satisfied, there is no economic distinction between the satisfaction of a desire for a comfort or luxury, and that for an additional supply of a necessary (*i.e.* a commodity which satisfies a primary need). We may, if we please, draw up a scale of relative importance, *e.g.* necessities for existence, necessities for efficiency, conventional necessities, comforts, luxuries and pure waste, but it by no means follows that this is the order in which these different classes of economic goods will be regarded in the minds of normal civilised men. Thus, from the purely economic standpoint, these classes of goods tend to mingle, and all alike are estimated by the money measure.

3. Even to-day there are free goods which satisfy man's primary needs, *e.g.* air and the sun's light and warmth. In England, except in uncommonly dry summers, the water supply is ample for all wants, though it does not always exist in the places where it is required. Yet, man's attention is not concentrated on these free goods, because they do not possess a money price. In common speech, a man would not be said to consume these free goods, and in Economics it is not usually necessary to treat of them, because there is no

money estimation. When a want is satisfied, the process of satisfaction is known as Consumption, if the using up or the destruction of economic goods is implied. Thus the use of an oxygen cylinder in an experiment is classed as consumption, because the oxygen has a money price; the vitiation of the atmosphere in a crowded room is not so classed, for the air can be replaced without cost.

4. The scope of the term "consumption" is wider than that implied in the common meaning. **Consumption.** It is held to include not only the quick destruction of wealth of the kind which gives its income of enjoyment at once, but also the stream of satisfactions provided by economic goods whose depreciation is slow; ancient monuments owned as personal property provide an extreme example of this type. Consumption, in fact, does not in itself imply destruction or even depreciation, though such is the almost inevitable end of all wealth. Consumption is not the same as simple destruction, for the essence of the former is that wants shall be satisfied; destruction, however, may be a necessary accompaniment. If food is eaten, it is in a sense destroyed, but a want has been satisfied, and the food has therefore been consumed; if simply left to rot, it is destroyed, and loses its value in respect to the original want; no satisfaction has been given, and therefore no consumption has taken place. Consumption may, however, lead directly to the further production of wealth; coal is consumed in order that a new form of wealth, *e.g.* cloth, shall appear.

Changes in the particular form of wants, and in the form of the corresponding wealth which satisfies the wants have taken place continuously as man has developed, but human consumption is built to-day on the same basis of wants as is found in primitive societies. There is first the necessity for sustenance, but this factor is less important in England

than it is in regions of difficulty where life is largely a struggle for bare existence. It is just because the modern Englishman has little fear of absolute starvation that he is able with a freer mind to concentrate attention on those wants which are yet unsatisfied; for he can balance the satisfaction given by a luxury against that given by a superabundant supply of a necessary food. Civilised economy is very different from savage economy; this fact will be more fully developed in the theory of value. But though the abundance of food and drink is a mark of civilised life to-day, there is no certainty that the basal human needs will never again cause serious concern. War-time economies showed the ordinary man how seriously his normal habits could be interfered with by shortage. (See the Malthusian doctrine, p 108.)

5. Man's relation to food, however, has greatly changed; man is less animal in his modes of satisfaction, and his desires are no longer satisfied by mere physical satiation; he requires an improvement in the quality of his food, especially in relation to cooking and preparation. This holds good also with regard to the need for shelter, for civilised man requires greater comfort and a more beautiful environment than that provided by a primitive hut; the desire for better clothing has developed at the same time. The curiously persistent desire for ornament has been subject to the same general changes. Above and beyond all this, however, there has been a great development of new classes of wants, *e.g.* the desire for travel for its own sake; the production of forms of wealth capable of meeting the new demands has imparted a richness and variety to modern life which is perhaps the chief distinction from savagery.

We cannot here discuss the ultimate meaning of the

abounding desires of modern life, save to remark that we cannot believe that the increase of wants is an unmixed good. The effect on economic life is less doubtful; in two ways the result has been a marked stimulation of the productive powers of civilised peoples. The demand for new satisfactions has called out the ability and enterprise required to furnish a supply of goods able to assuage the new wants. Again, the fact that man has increased the number of his desires has made it necessary for him (human nature being what it is) to put forward efforts in order that he may create the wealth necessary to satisfy his desires, or else to work to produce other wealth which he can exchange for the economic goods wanted. As man's requirements have broadened, the production of wealth has developed concurrently, and this increase of production may be imputed mainly to the pressure of increasing wants.

6. Wants are indeed illimitable in number. It is probable that no man is completely contented for any length of time; even when he has no definite strong desires remaining to be satisfied, his wants are potentially capable of development; new conditions may arise which will provide the prospect of new satisfactions. Human contentment is short-lived; the primary needs may be assuaged in such a way as to give intense pleasure, but these needs are recurrent, and must be met at intervals. Even where consumption seems to offer the prospect of an extended pleasure, the first experience of contentment wears off and new wants appear. Sudden riches seem to solve life's troubles, but man adapts himself to new and more pleasurable conditions, and can soon see clearly that there are further wants beyond his immediate contentment.

**Wants are
Illimitable.**

A British soldier lived a far less happy life in the field

than in his own home, but the difference was not so great as the effect of a sudden plunge into camp life, or, conversely, that of an unexpected leave, would seem to show; man can adapt himself to a forced diminution of his habitual satisfactions, as well as to a development of them. It seems that everyday pleasures become half instinctive, and that energy is thus set free for attention to other sources of satisfaction. Thus, even a persistent satisfaction does not represent permanent full contentment; a recurrent need obviously cannot do so. We should not therefore conclude that new forms of wealth do not increase human happiness in the long run; they may raise the general level of contentment, and also form a basis for later satisfactions.

7. Wants are unlimited in number, but limited as regards the capacity for satisfaction; indeed, —**Satiable.** it is the limitation of the satisfying powers of a single good thing that inspires the search after new goods. A child cannot indefinitely derive a continuous satisfaction from eating the most delicious foodstuffs; it is equally true that the higher pleasures may stale by repetition; this question will be dealt with more fully below.

8. Wants are to some extent alternative. This is obvious enough in the case of goods which —**Alternative.** can satisfy wants based on an ultimate necessity. To a poor man the desire for bread may be almost entirely removed by the consumption of potatoes, rice, or other starchy food. The principle involved can be extended almost indefinitely; necessities for efficiency include a considerable variety of foods, but necessities for existence may consist almost exclusively of a single food; bread and meat are as one to a starving man, while a person who must use his full powers must pay due atten-

tion to proportion. Even for a well-nourished man, however, choice may range between wide limits.

When we pass from needs to the less urgent wants, we find that the most divergent classes of goods compete for favour. A man in a state of unsatisfied discontent may be cheered by the prospect of an interesting book, a luxurious meal, an exciting football match or a day in the country; any one of these experiences will give him a special but definite satisfaction. Again we see the necessity of applying the term "consumption" to the most diverse things provided that, as in this case, a money price may be used to estimate the intensity of desire. The man in question will consider, not the special nature of the different desires, but their intensities, and these he will instinctively compare by the money standard.

9. A distinction can be drawn between alternative desires, which exist when the same want is —**Competitive.** satisfiable by more than one commodity, and competitive desires, which may be of very diverse character, but which compete for satisfaction. The first example above quoted (bread and meat) represents alternative goods in the case of the starving man; the last example deals with competitive desires. The existence of alternative (or interchangeable) desires is of great importance in Economics; wherever an economy exists, *i.e.* where there is an attempted adaptation of means to economic ends, there is a continual attempt to replace the desire for any commodity by another desire which shall provide the same or a similar satisfaction at a less cost. The Principle of Substitution is the name given to this tendency, and it is abundantly exemplified in all branches of our study.

There is no doubt as to the reality of competitive desires, but a direct attempt to estimate the changes in the character of consumption under different circum-

stances is met by many difficulties. We may in passing note Engel's Law, based on careful observation; it states, that the less income a family obtains, the greater will be the proportion spent on food.

10. Wants may be complementary, *i.e.* a commodity may provide a satisfaction only when another —Complementary. satisfaction is obtained at the same time; thus a single shoe is practically useless. To some extent the primary needs are alternative, *e.g.* sleep may to a slight degree compensate for hunger but, broadly speaking, existence can be sustained only when the whole combination of essential needs is properly met. This complex of necessities is woven in with those needs and habitual wants which form one side of a man's everyday existence; the whole combination forms the "standard of life" of the individual concerned. New satisfactions may cause a temporary excitement, but when a man has become used to them, the effect is simply that of a raising of the general level of contentment, just as the influx of water into the sea raises the level of the whole ocean by an infinitesimal amount.

11. We must now make clear the connection between wants, desires, satisfactions, goods, and a new Utility. economic concept, that of Utility. Wants are physiological, *i.e.* they are a craving for physical pleasure. Desires are concentrated on a definite object, and thus contain a mental element; such definite objects are usually material and are called goods. Satisfaction is the removal of wants by means of the consumption of the requisite goods, and is a mental state. Utility is the measure of the amount of satisfaction, more correctly perhaps, of the intensity of satisfaction. The peculiar difficulty of investigating mental states is obvious, but their measurement opens out still deeper problems. Material things can be counted, because

a recognisable unit may be employed; in the measurement of mental states, however, there is the double difficulty that a unit of mental contentment is unrealisable, and also that the mental states which it is desired to measure differ from each other in kind and in quality as well as in quantity. An individual cannot accurately compare the intensity even of his own sensations at different times; the possibility of directly estimating the sensations of another individual is small indeed. Yet, Economics must use an external and material standard for this delicate work.

Where Economics cannot rival the exactness of Physics, it seeks an approximation to the truth. Though the economist cannot estimate the amount of satisfaction actually obtained by the consumption of a certain commodity, he can make a fairly correct surmise as to the relative amount of satisfaction which the particular consumer expects to derive from goods he is about to consume. The economist is aided by the importance of habit and experience. An individual comes to know his habitual sensations, and arranges them in a kind of mental scale; if he is desirous of a satisfaction which necessitates consumption, he balances the expected pleasure against that which the money price of the necessary wealth will give him if he foregoes the consumption of that particular wealth. The economist takes a short cut through this elaborate maze.

A boy is hungry and feels a want; he sees an apple, and desires it; the apple is wealth, for it must be bought, but satisfaction is obtained by its consumption; the boy estimates the amount of satisfaction he would obtain, and balances it against the best other possible method of using the money he must pay for it; if he is in doubt whether to buy the apple or keep the money, it may be assumed

that the expected satisfactions from the apple and from the other most attractive purchasable commodity are the same. The economist quite legitimately balances an expected satisfaction against another expected satisfaction; he speaks, however, as if he balances the intensity of a mental state against a piece of metal money.

12. Thus it is best to define the Utility of a definite amount of a particular commodity under certain conditions as the satisfaction which the consumption of that commodity is expected to give to the individual consumer concerned under those conditions. It cannot be measured, but it may be compared with a corresponding utility, that of money. Although the latter cannot be measured, it is possible to estimate the amount of money which will give the same satisfaction as that of a commodity whose utility it is required to find; thus the utility of the unit of money may be taken as a measure of other utilities. For convenience, it may be said that utility is measured in money; more accurately, we say that two utilities may be compared, as being in the same ratio as two sums of money.

The preceding account does not exhaust the complexities of the subject; it is not certain that the statement that one commodity contains twice as much utility as another is really justifiable. It is better to avoid the numerical comparison of utilities as far as possible, and to say rather that if the expected satisfactions to be received from two processes of consumption are equal, the price which the consumer is willing to pay for the two necessary commodities will be the same, and *vice versa*. It is necessary to understand these rather subtle distinctions, for a thorough comprehension of utility is required for the elucidation of the difficult problems of Value, which are of vital importance in Economics

13. Desire, expected satisfaction, and realised satisfactions represent three similar mental states; the individual concerned may use the money measure to make a rough estimation of each of them. Now the economist may wish to measure desire or realised satisfaction, but he cannot do it, for he cannot enter into the mind of the consumer. He can deal directly only with expectations; when he wishes to measure the other mental states, he must assume that the desire for an act of consumption, the expected satisfaction from it, and the realised satisfaction are the same. This is certainly not quite true; a desire often contains an element of unreason, *i.e.* the consumer knows that he will not obtain a pleasure corresponding to the keenness of his desire, while expectation itself is often mistaken. On the whole, however, where a man's habits are fairly fixed, these three mental states will not differ greatly in intensity; it is then roughly true to say that money can measure either a desire or a realised satisfaction.

A bridge between Psychology and Pure Economics has thus been built; our starting point will now be the knowledge of the satiability of wants, and our aim the formulation of a fundamental economic law, the Law of Diminishing Utility.

14. Consider the case of a child who finds an abundance of wild strawberries.¹ The first is eaten with intense delight, which hardly diminishes after eating a dozen or so. Sooner or later, however, the first

¹ Readers who have a knowledge of graphical methods (see Mathematical Appendix) should try to illustrate this and similar examples graphically. If consumption is plotted horizontally and pleasure vertically, the graph will slope downwards to the right. When consumption is small, the curve is normally almost level. During the period of distaste, the graph lies below the horizontal axis.

flush of pleasure passes, and an additional strawberry will give much less pleasure than did the first. At a later stage, the pleasure will become more languid, and at last the child will not care whether he eats another or not. After this point, the child would prefer to eat no more, but if through force of habit he persists, a dislike of the fruit will be created; if the child is naturally greedy, the feeling may turn to nausea, so that on looking back, the child will see that it would have been better to leave the fruit alone altogether, for the earlier pleasure is more than balanced by the later distaste.

This example represents a great general principle. If a man consumes any goods whatever, so that successive units are presented, sooner or later he finds that the satisfaction derived from one unit is a little less than that obtained from the immediately preceding unit. (In the present section, the term "consumption" is given its everyday meaning.) "Sooner or later" must be inserted, because in some cases the pleasure may increase for a certain time.¹ If a man reads the daily papers in a reading room, the perusal of the first paper may increase his interest in the second, but sooner or later he will read succeeding papers with increasing boredom.

The principle holds good for all classes of satisfactions, whether they be pure or vicious, but the qualification that the units of the commodity must be presented successively, without long interval, must be noted carefully. The man must not have had time to change his habits. A person may force himself to do a series of good actions, but soon tires of his resolve; after a time, he returns to the work with equal zest, and finds that he is less easily discouraged; after a succession of attempts, at intervals, he may find a

¹ i.e. the graph may at first rise to the right.

permanent pleasure in the work he at first disliked. In the same way, a succession of vicious acts, at intervals, may lead to a liking for base pleasures. In these cases, the man is not the same at the end of the process as at the beginning.

16. The principle thus exemplified must be translated into economic terms; the money measure
Application can hardly be used in this case, for the price
to Economics. of a single strawberry is too small; another unit may, however, be substituted, *e.g.* a marble. The child might be willing to give many marbles for the first strawberry, but having eaten this and several others, he will not be prepared to pay the same price for later ones; the number of marbles he would be willing (if necessary) to give for a strawberry continuously diminishes; a time will come at last when he will not accept another strawberry as a gift. The first strawberry may in itself be indistinguishable from the last; there is no change in the objective nature of the external commodity; what has changed is the feeling of the child in relation to the commodity; the subjective intensity of desire, *i.e.* the utility has diminished. Each strawberry would provide the same utility under identical conditions; as it is, the utility of the successive strawberries gradually diminishes

Again, consider a seaside rowing expedition, where the charge is a shilling an hour. A man might be willing to pay four shillings rather than forego his row. When he has rowed an hour, he might become so interested that he would, if necessary, pay five shillings for the next hour. He loses interest, however, and would pay only three shillings for the third hour; he is now getting rather tired, and estimates the next period as being worth sixpence, but as he is some way from shore and not able to return at once he must pay an extra shilling, and so

decides to row out the whole hour. Later, however, he is caught by the tide, and must pay another shilling, while he would give half-a-crown in addition to be able to return immediately. He arrives on the shore at the end of the hour succeeding this one, but would have given four shillings, in addition to the hire, if he could have been spared this last struggle.

Only so long as the money the man was prepared to pay for an hour's row was greater than the hire, would he wish to remain. If he could have returned instantaneously, he would have returned at some time in the fourth period,¹ and probably have returned towards the end of that period even if he could have hired the boat for nothing. In the next period, he would have required to be paid to remain on the water. At the end of his experience, he will feel himself to have wasted six hours without compensation. His pleasure is measured by 4s., 5s., 3s., 6d., *i.e.* by 12s. 6d. His discomfort is measured by 2s. 6d., 4s., and the hire of the boat (6s.), *i.e.* by 12s. 6d. If he had stayed any longer, it would have been better not to have gone at all.

There is an important difference between these two examples; if the child were wise and self-controlled, he would stop eating when the strawberries ceased to give him satisfaction; in the second case, the man would have returned, if able, as soon as the satisfaction derived from the row ceased to provide a surplus over the hire; if one hour were worth 1s. 6d. and the next 9d., he would stop at the end of the former period. Further, the child could stop at the point at which the next strawberry gave no

¹ Assuming that the boat could be hired for small intervals, *e.g.* for a minute. The hourly estimation will thus be the sum of the estimations for each separate minute. Readers should attempt to draw a rough graph. Note the quick fall in the amount of pleasure per minute in the fourth period.

satisfaction, knowing that all his former pleasure was pure gain, but the rower gains only up to the point at which the satisfaction from the next period is equal to the hire for that period. The first example illustrates the working of the principle with regard to free goods, while the second applies to economic goods.

16. We are now able to understand the difference between two kinds of utility. When the child has eaten ten strawberries, the total pleasure experienced is far greater than that offered by the first, but probably much less than ten times that given by the first. The utility of the whole ten is known as the Total Utility of the ten strawberries. It may happen that the child ceases to eat strawberries at this point, not because he is satiated, but because he finds that another fruit has now a greater attraction for him. The utility of the last strawberry eaten is called the Marginal Utility of the ten strawberries.

This distinction is of the greatest importance, and must be elaborated. Passing from the conception of a number of goods successively consumed to that of a stock of goods slowly giving its income of satisfaction, the same distinction between total and marginal utility may be noted. A man would give a high price for a collar rather than do without it altogether, and the utility of a second and third collar is hardly less. If, however, he already possesses a score of them, the utility of an extra one is much less than that of the first. In itself, it may be quite as useful as any of the others, but the addition to the utility of the former supply is much less than it would have been had there been no large stock already in use. The utility of the twenty collars taken together is their total utility; the utility of the twentieth collar taken alone is their marginal utility.

Take a yet more durable article; a land-hungry profiteer may desire land from a spirit of pride of possession, but though his desire for a few acres may be insistent, and though his hunger be unlimited in extent, his estate may become so large that he will buy an extra acre only if it is economically profitable. The utility from his whole holding represents total utility; that from the last acre (or other unit) he actually buys represents the marginal utility of his holding. Jevons used the term "Final Utility" for the utility of the last unit, but this example suggests that "marginal" is a better term than "final," for in practice few human wants are completely satisfied.

17. The Law of Diminishing Utility may now be formulated. In essence, it says that "The marginal utility of a stock of similar goods decreases with the number of units in the stock." It is supposed that the utility in question is obtained by the same person under uniform conditions. The stock of similar goods may be held to include the case where the units have been progressively destroyed by an act of consumption, provided that successive units have been consumed at short intervals. Thus the law implies that the possession of ten pictures of equal merit gives less than ten times the pleasure given by one picture; that a visit to three concerts in an evening is not three times as desirable as a visit to one concert; and that the eating of twenty sweets is not twenty times as pleasurable as the eating of one of them. However, the fact that the law may be inoperative at the beginning of an act of consumption must be remembered.

The law may also be formulated in another way:—"The total utility of a stock of similar goods increases with the stock up to a certain limit, but not so fast as the stock increases."

18. Thus the marginal utility may rise at first in exceptional cases, but always falls in the long run; it becomes zero when the individual is indifferent to further consumption or possession; after this point, he requires to be compensated for further consumption: this implies that utility becomes negative; we may then speak of disutility. Thus if a man sets out for a longer walk than he intended, the last mile may be distasteful; the utility is then negative; alternatively, we may say that utility is replaced by disutility; thus, after the point of indifference, marginal utility becomes negative.

19. Total utility always increases at first, if the commodity is consumed (or possessed) voluntarily, but the rate of increase gradually diminishes, until total utility is momentarily stationary; at this point, marginal utility is zero, and total utility is at its maximum. After this point, each successive unit decreases the net total utility, because there is an addition of disutility at every step. When the net total utility has fallen to zero, the marginal utility has fallen below zero. Thus the total utility is zero at starting, and also at some later period, if consumption is carried far enough. No man will voluntarily possess or consume any commodity up to this point, but occasions do occur when a man has a superabundance of a useful commodity forced on him. If a person is delayed in the train while on a pleasure excursion, it may be that the disutility of waiting may more than counterbalance the day's pleasure; the marginal disutility is then very high, and the total utility itself will have fallen below zero.

The great majority of economic goods are so limited in quantity that the man of moderate means who desires

them at all can afford to buy them only up to a certain point; he would have continued to procure them had they been free goods. Thus the average man must cease to buy economic goods at a point where they still give him a positive, though diminishing marginal utility, and before the point at which total utility is a maximum.

20. The importance of the existence of competitive wants is realised in this connection. Where a consumer possesses so much of a certain commodity that the marginal utility is brought below that of the marginal (initial) utility of a new product this latter will now be acquired until its marginal utility falls to that of the former product, or beneath the initial utility of a third product; thus the partial satisfaction of urgent needs brings down the marginal utility of necessities, and makes possible the consumption of new goods. The real use of diamonds is far less than that of food, but where food is abundant, its marginal utility is far less than that of diamonds. Here also it may be noted briefly that when a purchase is made, the lessened supply of money causes the marginal utility of money itself to increase, as regards the purchaser. For most purchases, however, it may be assumed that the money spent on a certain article is so small a proportion of a man's money stock that the change in marginal utility is slight.

21. The next step leads to the heart of Economics. What possesses the greatest marginal utility for a man, that will he be the most willing to buy, but he is faced by the problem of price. To a rich man, the marginal utility of money is low, and he is able to satisfy a languid desire for an edible luxury, when a starving man cannot buy a little bread. If a man has a choice of many different kinds of free

**Relation to
Competitive
Wants.**

**Influence
of Price.**

goods, he will naturally consume each up to a margin such that the respective marginal utilities are equal; otherwise he would gain by restricting the consumption of goods whose marginal utility was small, and applying his attention, thus freed, to goods of greater marginal utility. Wealth, however, must be bought, and thus when different men are compared, it cannot be said that the price they are willing to pay for a commodity measures the true comparative marginal utilities as between the different men, unless the persons have identical tastes and possess equal means. The effective desire of the starving man for food may be less than that of the rich man.

22. Thus we reach the conception of Demand. Demand has a more concrete meaning than desire; Demand. } we may say that "The demand of a person for a commodity at a certain price is the amount he is willing to buy at that price." Demand, like desire, is individual, but also it depends on and varies with the price.

23. A housewife estimates roughly the total price of each article she buys, and increases or lessens her stock as prices fall or rise. Take a Demand Schedule. concrete example, *e.g.* butter; in this case she will be concerned not so much with the amount of butter on hand as on the amount bought per week; no new principle is thus involved, for the laws which apply to size of stock will apply equally to the amount bought in a certain time. We must, however, change our unit, and speak not of pounds of butter possessed, but of pounds bought per week; our unit may thus be one pound of butter per week. The following table will then suggest the influence of price changes on demand.

Such a table is known as a Demand Schedule. The compilation of such a list is of some practical difficulty; it is, however, important to grasp the general principle

involved, that individual "demand" in the economic sense is a meaningless term unless the price of the article in question is given

	<i>Price.</i>	<i>Demand.</i>
1/-	per pound	5 pounds.
2/-	" "	3 "
3/-	" "	1½ "
4/-	" "	½ "
5/-	" "	¼ "
6/-	" "	1 ounce.

24. The laws of individual demand apply so well in the case of group demand that little is gained by an attempt at separation; in some ways the latter is more useful in economic study; it is also steadier and easier to estimate. The **Total Demand** for a commodity at a given price under given conditions is the sum of the separate demands of the individuals in the group concerned. Group demand is often fairly steady because the individual peculiarities of different consumers tend to neutralise each other; also, a man's demand for, *e.g.* motor cars is most uneven as, owing to the huge price of a car, a second car will in normal circumstances give him far less utility than did the first; if, however, a dealer is in contact with a large number of well-to-do men, he finds his sales to be fairly constant. The Law of Demand, true for all types of demand, may then be stated:—"Demand increases when the price falls, and *vice versa*" It is conceivable that the lowering of the price of certain articles may cause particular people to diminish their purchases, *e.g.* in the case of articles of fashion; the total demand of a large number of people will almost certainly increase in such circumstances.

The law of demand is not a quantitative statement; a schedule is not absolute, but varies for different persons

and for different commodities; it may even alter for the same person in relation to the same commodity. An "increase of demand" or a "raising of the demand schedule" is possible; the purchaser will then be willing to take a greater quantity than before for each separate price. In any particular schedule, again, there is no simple relation between price and demand; *e.g.* it is only rarely and accidentally that the doubling of price will exactly halve the amount bought. If the price of salt is doubled, there will be little change in the amount bought, but if that of amusements is doubled, the demand may be much less than half what it was.

25./ If a proportionate rise in price is followed by a large proportionate decrease in the amount bought, demand is said to be Elastic; it will then also happen normally that a proportionate fall in price stimulates a large proportionate increase in purchases. If, on the other hand, the demand is almost constant whatever may be the price (within limits), the demand is said to be Inelastic within those limits. If a 1 per cent. fall in price causes a 1 per cent. increase in purchases, the elasticity is said to be unity (1); the elasticity is thus the percentage increase (or decrease) in purchases which follows a 1 per cent. fall (or rise) in price.

Perhaps the best example of an inelastic commodity in England is that of salt; this is a necessary article and a very cheap one, and these facts, on the whole, imply inelasticity. Most necessary commodities, and also most very cheap ones are subject to inelastic demand. Cases of elastic demand are less clearly recognised, but it may be said on the whole that those goods which are luxuries and are very high-priced, relative to a particular social class, will be subject to an elastic demand, as regards

that particular class. The demand for admission to a football match is inelastic to a man of means, for the price to him is low, but it is very elastic to the errand-boy; the demand for stand accommodation is elastic to the middle-class enthusiast, but inelastic to the millionaire, though the utility of superior accommodation to some poorer men might be so great in relation to their marginal utility of money that this particular demand might be inelastic. What a rich man considers a low-priced necessity, a poorer man may regard as a high-priced luxury, and the degrees of elasticity will vary in the two cases.

Further, elasticity varies at different levels of the schedule; the demand for sugar before the war was inelastic, but now it is decidedly elastic as regards the poorer classes. In some countries, salt is so limited in quantity that the demand for it is elastic; again, if the supply of any commodity whatever is so increased that the price falls sufficiently, the demand for it becomes inelastic; if diamonds were so common that they filled the markets to overflowing, the demand for them would become inelastic. If they were highly prized, but extremely rare, the demand for them would be elastic for all classes; under present conditions, demand is inelastic in the case of some millionaires. If diamonds gradually fell in price, elasticity would decrease for richer men at each successive fall, while remaining high for those who could just afford to buy them. If diamonds were free goods, elasticity would fall to zero for all classes. As the price of an article falls, the elasticity of demand drops to unity for poorer and poorer men. For more and more richer men, demand becomes almost inelastic.

The above outline must not obscure the fact that other factors may affect elasticity through the peculiarities of

individual desire, but this account is sufficient for our present purpose.

26. The study of schedules leads to the notion of Consumers' Surplus. In the illustration of the rower it was seen that the man would have paid more than he did for the first hour rather than lose his row altogether; during the third period, he would have paid a less excess price rather than lose the additional pleasure. A starving man will pay his whole stock of money rather than be without food, if there is no other alternative; in almost every case, the first portion of the stock of a commodity is obtained at a much lower price than the consumer would be willing to pay; though a person may pay fourpence each for six fresh eggs, and considers a seventh to be worth less than that price, he might be willing to pay ninepence each for a couple, if he could get no more, and a shilling if he could obtain only one.

He pays the marginal price (fourpence) for each egg; from the first one he receives a satisfaction he measures by a shilling, and thus there is a net gain represented by eightpence; on the next there is a net gain represented by fivepence. The total net balance of satisfaction is called Consumer's Surplus; a person will continue to purchase a commodity till the marginal utility sinks so far that the surplus due to the next unit would be zero or negative, *i.e.* until the satisfaction from the next unit is less than that from the purchase price, unless competing goods offer a larger surplus in the meantime. The existence of this surplus means that money saved on the purchases of the earlier units is available either for further purchase of the same commodity, or for the acquisition of other goods.

The actual consumer considers the question not in the light of an imaginary schedule, but rather in respect to

the amount he must give for his stock as a whole. The individual schedule may be:—

<i>Price.</i>	<i>Demand.</i>	<i>Price.</i>	<i>Demand.</i>
1/-	1 egg	5½d.	4 eggs
9d.	2 eggs	4½d.	5 „
7d.	3 „	4d.	6 „

The total surplus is (8d. 5d. 3d. 1½d. ½d. 0) *i.e.* 18d. Now, in practice, we may assume that if the man had been given the choice of buying six eggs or none at all, he would be prepared to pay sevenpence for each of them (for the schedule shows that he would pay 3/6 if necessary for the six eggs): as he actually pays fourpence for each egg, he gains threepence surplus on each egg. Thus we may define surplus as the price a man is prepared to pay (if necessary) for the whole of his stock, diminished by the actual cost, satisfaction and cost being estimated in price per unit.

On the whole, goods whose demand is inelastic show the greatest consumers' surplus; a man would pay a very large price for salt rather than do without it altogether.

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BOOK II.

PRODUCTION.

CHAPTER IV.

AGENTS OF PRODUCTION—LAND.

1. The direct gifts of nature satisfy a very small proportion of human desires, and man is compelled to produce wealth to eke out the insufficiency of free goods. Supply is correlative to demand; for the present it is enough to say that every property of demand corresponds to a similar or related property of supply. The mutual relation of demand and supply forms the theory of Value, but in the present chapters, Production alone will be considered, and consumption will be taken largely for granted.

Production involves Man and external Nature.

Production involves man and external nature; man supplies the necessary direction, while nature provides matter and energy. Some think that not a single particle of the earth's crust is incapable of supplying a want, but, taking consumption as it exists, matter is not usually in a state in which it can satisfy man's desires most effectively. Sometimes the direct gifts of nature may be moulded by

human handiwork into satisfying forms, by means of Labour, but, as a rule, nature's further aid is required in the form of energy.

Nature is not a mere help to labour ; it sets limits to all production. Man has learnt to dominate the earth in the sense that the good gifts of nature have been effectively utilised, but it must be noted carefully that he is bound and limited by that very fact ; production implies a dependence on nature. In particular, man has always looked on land as the source of his goods, and his productive energy is guided largely by the character of the land that he controls. Land is not the only gift of nature, but it so far impresses men's minds that economists have taken it as a type of the various methods in which nature lends her aid. In economic analysis, "Land" is taken to include all the gifts of nature which man uses in production, however diverse they may be in character.

2. Land is a natural manufactory of those goods which are essential to existence. Man's needs include a steady supply of foods known as carbohydrates, necessary to actual existence, as well as of nitrogenous foods, a due proportion of which is necessary to efficiency. Nearly all food depends, in the long run, on the work of plants, which are able to form carbohydrates by utilising the sun's energy so as to bring water from the soil and carbon dioxide from the air into combination. The formation of nitrogenous products requires the presence of chemical compounds containing nitrogen, and these are obtained from the nitrates in the soil or else from the decay of animals or plants ; a little is obtained from the air by the action of certain lowly organisms. On these facts, human history has largely depended ; a release from present limitations might alter the whole future development of our race.

**Land a natural
Manufactory.**

3. The distribution of the higher animals is conditioned by surrounding plant life; in fact, human existence is for the moment utterly dependent on vegetable growth, and there is no immediate prospect of release. The minerals in the earth's crust are nearly indispensable, but their loss would not entail the destruction of human life on the earth. A savage existence might develop indefinitely in the absence of minerals; it could not survive the destruction of all plant life.

**Conditions of
Plant Growth.**

The soil provides the bulk of the raw materials that man needs; it also manufactures, or rather stores the energy which is equally necessary for production. Labour may supply energy as well as direction, and the higher animals may be utilised, but modern civilisation demands greater stores than these sources supply. By far the greatest portion of the energy required is obtained from the carbohydrates which in their formation have stabilised the sun's heat, so that on burning, the energy is again set free; the world's industries are at present based largely on wood, oil, and coal. Behind these are the tremendous unutilised sources of power in moving air or water, hardly touched even in the lands of their greatest abundance.

Man's present dependence on soil-grown plants is a result of human development rather than of natural necessity. A civilisation based solely on the food stores of the seas is conceivable, but Economics must deal with actual facts. Thus, though all the undeveloped sources of good things will receive attention in so far as they do contribute to welfare, it is on land as soil rather than on the wider meaning that attention must be concentrated.

A cultivator values land for the sake of the surface soil, and also for the share of the free gifts of nature which possession carries with it, *e.g.* rain, light, warmth, and air,

the factors which are conveniently classed as climatic. These are fairly constant in any particular district, but the character of the soil may vary greatly from place to place; soil is dependent on geological structure which, at least in England, may vary from one extreme to another within a few miles. Soils may be classed roughly as sandy, clayey, or calcareous; none of these types contain all the chemical compounds (apart from nitrates) required for perfect cultivation, but, in combination, they satisfy most requirements. By appropriate mixture, with the addition of phosphates and nitrates, an excellent soil can be manufactured artificially.

The supply of water is as important as that of chemical food; a sandy or calcareous (chalk or limestone) soil allows water to pass too easily, while clay is too stiff and is easily waterlogged; a "light" soil is thus susceptible to drought, and a heavy clay soil to flooding. Different crops require different supplies of water, but a mixed soil is generally as desirable from a physical as from a chemical standpoint. Fertility depends also on the degree of division of the soil particles; plant roots are able in time to penetrate the interior of the toughest soil, but man can often increase the immediate fertility of land artificially by breaking open the hard lumps and giving the rootlets a larger access to the contained salts. Deep ploughing does this and more; it also mixes the upper layers with the unexhausted portions of the lower soil.

The use of manure is threefold; it adds invaluable nitrogenous substances, it improves the physical structure of the soil, making a stiff soil looser and a light soil firmer; in addition, organic manure, in decomposing, gives warmth to the growing plants. Thus, except in rarely favoured spots where soil and climate combine to

lighten man's burden, there is ample scope for processes of improvement. Further, though carbohydrates may be manufactured indefinitely, the nitrogen, phosphorus, and other elements extracted from the land must be returned or fertility will be lost.

4. There is hardly a farm in England which could not be made to grow much more than it does; **Land is capable of improvement.** if great care were to be taken to break up the soil into tiny fragments, and if the seeds were sown with scrupulous care with regard to spacing and position, increased crops would be obtained. A rich farmer, if able and enterprising, might transform his land by a scientific mixture of soils and an effective use of manure; yet, farming is notoriously unprogressive.

There is a definite reason for this apparent neglect. If a capable farmer bought a piece of park land near to a large town, it would be of little use to him as it stood, and it might prove too sandy for immediate cultivation. If, however, he added the requisite chemicals by the use of lime and manures, and pursued an intelligent policy in regard to the choice of crops and of stock, he might make a very high return on his outlay; another farmer might be equally successful by applying similar methods to swampy land, having first concentrated attention on drainage; a tenant on a farm on a chalk hill might be amply repaid for the trouble and expense of heavy manuring and marling. Yet it remains true that in spite of the proved increase of productivity of land on which money has been sunk in the proper fashion, the capital applied to agricultural land in an old country like England is insignificant compared with that employed in manufacture.

To some extent this may be explained by the careful

attention paid to land in past times, for the present soils are much better than they must have been a thousand years ago, in spite of the tendency of continuously used soils to impoverishment. Agricultural lands are becoming more and more of a uniform quality, though great differences in productivity still exist. It seems that in the case of truly agricultural land, opportunities of great rewards to capital and enterprise have been taken in the past to such an extent that long cultivated land no longer presents tempting opportunities to enterprising farmers.

5. The explanation is to be sought in the fact that an agriculturist is largely a passive agent; a
Farmer a
Passive Agent. manufacturer can watch and control his product at every step, but a farmer must decide what crops he wishes to grow, and when he has taken his measures must leave the result to the working of natural forces. Now the free gifts of nature are unaffected by any expenditure of labour and capital on the part of the cultivator. A farmer can make a profitable outlay on virgin soil because he is able to adjust the balance of the various factors (free or appropriated) by introducing those which are in deficiency. When this balance is reached, a doubling of the efficiency of certain factors cannot be expected to double the product unless the remaining factors are also doubled in efficiency.

6. Thus, if a farmer doubles the capital and labour (provisionally measured in money) he applies
Tendency to
Diminishing
Returns. to the land, there still remains the contribution of nature's free gifts; up to a certain point, nature will be as helpful as before, for the sunshine which is not fully utilised in ripening a thin yield of corn will suffice to ripen a crop more thickly sown. Sooner or later, however, the individual plants will compete for the constant limited supply of light, etc.,

and then each plant cannot give the full yield it would have done had the gifts of nature been capable of expansion. Sooner or later, especially in the case of highly cultivated land in long-developed countries, there comes a time when an increase of outlay will secure a less than proportionate increase of product. In one form or another, crowding of individuals occurs, and though the difficulty may be pushed back by better cultivation, better methods, or even, as in China, by an artificial increase in the surface area of the land, the tendency is ever present.

7. This tendency to diminishing returns was clearly brought out by Ricardo. He argued that when a new country was settled, the best and best-situated lands were the first to be tilled; when these were appropriated, land “of the second degree of fertility” was taken up; when this was under tillage, land of the third degree was cultivated, and so on. Where land is a free gift of nature, the settler may select at will, and in fact will sow his seed over a wide area rather than take extraordinary pains over a small plot. The cultivation will be “extensive” rather than “intensive.”

As land becomes appropriated, only the inferior parts will remain free, and as population progresses further, the whole land will become private property. Ricardo’s argument depends on the notion of diminishing returns; if this law were not effective, no one would trouble to occupy inferior lands, and the world’s food supply could be grown on a small holding by intensive cultivation.

8. The Ricardian theory of Rent was based on this doctrine, and was developed by the classical economists. James Mill conceived of a “dose” of Labour and Capital, meaning thereby a unit of

labour and capital expressed in terms of money. A farmer may be doubtful whether to hire labourers for further weeding or ploughing, to marl his land or to buy better implements; in each case he will estimate the extra product obtainable by the expenditure of a certain sum and, other things being equal, will choose that course of action which will bring him the greatest net gain. From our present narrow standpoint, the particular way in which an extra outlay is expended is irrelevant, and we simply assume that the farmer spends the extra money to the best advantage. A dose is then a small sum of money (perhaps rather the capital and labour represented by that sum) which the farmer believes he employs in the best possible manner.

Consider now the application of successive small, equal doses to a piece of land in a new country. According to the deductive theory of the old economists, such land is the best and best-situated it is possible to obtain. During extensive cultivation, the extra produce attributable to a dose is large; as capital and labour, however, are continuously employed in the most favourable way, the soil is gradually perfected, and further great improvement is made continuously more difficult. The new return to a dose is now less than the old, and if the settler continues to apply more doses, a time will come at last when it is only just worth while to apply another one; if the dose is very small (and it can be made as small as needful) there is little difference between the return to the last dose applied and that which is estimated to a further dose; the modern term "marginal" dose may be applied to each.

In an old country where land is limited in supply, it is cultivated up to this margin at which it is only just worth while to apply a further dose; a settler in a new country,

however, has the alternative of cultivating inferior land. When the return to a dose applied to new land under extensive cultivation is greater than that to a dose to better land which is tilled more intensively, it will pay the settler to take over inferior land and to till it until the marginal return on the new land is pulled down to that on the old; when this happens, it will probably be profitable to take yet inferior land into cultivation, and so the process continues.

Ricardo brought out the idea of a surplus produce given by good land over bad; to this surplus he attributed the existence of rent, assuming the presence of land which does not pay for cultivation. In modern terms, a partially settled country is cultivated up to a margin in two directions; a capable farmer will cultivate the best land available up to the application of a certain marginal dose; extensively, he will till it up to a marginal acre of the worst land he is willing to cultivate, given his limitations of means and energy.

If he is successful, the marginal return on the richest land is equal to that on the poorest under cultivation, and indeed to that on every acre, though practical expediency may make such exactness impossible. If his return on poor land is less than that on rich, he should transfer outlay from the poorer to the better land; if the reverse is the case, he would be well advised to transfer movable capital from the better land to the inferior; in this way, he will raise the lower marginal return, and bring it to an equality with the other. Both the marginal quantities are changed by such transference of resources; in the first example, the marginal return on the better land will fall and that on the poorer land will rise, till the two marginal quantities are equalised. If a farmer is able to apply new capital or labour, he will be wise to lessen the differences

between the marginal returns on various parts of his holding.

Thus a twofold surplus exists; there is that on which Ricardo laid such stress, of the produce on the best land over that on the land which is so poor that it pays no rent; there is also the surplus amount of produce given by the application of the first applied dose over that given by the dose which it is considered only just worth while to give to that same piece of land.

9. The Law of Diminishing Returns may now be expressly formulated. "If successive equal
Law of Diminishing Return. doses of labour and capital are applied to a piece of land, sooner or later the returns to each dose will successively diminish, provided that external conditions remain unaltered."

The general resemblance in form to the Law of Diminishing Utility will have been noted, and the qualifications which hold in regard to the consumption law hold in this case also. Further, the conception of doses and of small equal increments could have been equally well applied to the problems of consumption.

The above is a statement of the principles underlying Ricardo's doctrine of rent. We will deal now with a historical objection to that doctrine.

10. "The most fertile and most favourably situated
Carey's Objections. land will be first cultivated" (Ricardo). The original theory of rent was based largely on this statement, which was intended to present at least an approximation to the truth. An attack on the Ricardian theory was made by the American economist Carey, who sought to show that Ricardo's fundamental assumption was false. Carey held that in a new country, the highlands were first cultivated, and that the development of the more fertile lowlands followed

later. It is true that a soil which may prove to be very rich after a little preliminary labour has been spent on it may be passed over in favour of tracts which will give a fair return to less labour. Enormous outlay may be required to clear the richer lowland, probably rankly overgrown, while the necessary drainage may prove impossible in the absence of labour and capital. Personal safety against wild beasts may also prove an important factor.

Carey is so far right in that he disproves Ricardo's historical statement in its literal form, but the context makes it clear that Ricardo realised the complexity of the problem. The theory holds good if a wider interpretation is given to the word "fertile"; Ricardo expressly mentions the effect of situation, and Carey's special instance is analogous to the case of situation. It is obvious that a settler will prefer a fair soil in touch with good markets to the richest land which is so isolated that produce cannot be marketed; a development of communications in the latter district may reverse the order of preference.

Broadly speaking, it is true that cultivation proceeds from the more practicably fertile and best situated land to the less. The Fens in their original state offered little inducement to the mediaeval cultivator, and before drainage it was permissible to regard them as inferior lands; it is conceivable that sensational agricultural developments might alter even our present standards, but conclusions based on our own experience are not for that reason invalid.

Carey's objection is accurate in fact, in so far as he shows that the ultimately fertile soils are not always first cultivated, but Ricardo is essentially right. In any case, this postponement of the settlement of certain fertile lands will only push back the working of the law of diminishing returns. In an old country, possessed of

ample capital and labour, the outlay required to transform a fen into first-rate agricultural land is easily forthcoming, and the richest soils have their opportunity. The marginal return on a Norfolk fenland farm is probably little different from that on a chalky hillside enclosure a few miles away, but the total output proceeding from a given outlay is much greater in the former case. Sooner or later, diminishing returns will occur as any land is more intensively worked. More and poorer land will be forced into cultivation, and Ricardo's exposition of the superior productivity of the better soil will be vindicated. The question of situation, as well as the suitability of different crops must, however, always be considered. Near large towns, the land may be intensively cultivated because the market is convenient and assured, and because care is taken to produce what is most easily sold; this, however, raises the question of value.

Carey believed also that the rent of land was dependent on the outlay which had been applied in the past, and not on the natural fertility of the soil. Here, as so often, Ricardo's own words give an impression of inaccuracy, though he himself probably recognised that his statements were not literally exact. He speaks of "the use of the original and indestructible powers of the soil"; it must be admitted that in an old country it is quite impossible to distinguish between the original fertility and that conferred by long ages of manuring and alternation of crops. Much agricultural capital is sunk blindly, in the hope that results will justify expenditure, though there is no exact means of estimating the excess produce obtained by such expenditure; further, outlay is often rewarded by an improvement in the soil itself rather than in the next crop; capital is lost as capital, but a higher grade of soil is obtained.

11. Thus a scientist would not readily accept Ricardo's statements as to the "indestructible" powers of the soil, but the economist was not so inaccurate as would appear. However much a soil is exhausted, it never loses its fertility completely, and the mediaeval practice of leaving the ground occasionally fallow restored some of its productive capacity. The physical qualities of a soil persist, even when plants have used up the valuable salts. Ricardo's argument holds good if the meaning of "original" and "indestructible" is widened so as to include those chemical properties which are indeed exhaustible but which may be continually renewed by manuring or rotation so that the condition of the soil after ages of cultivation is no worse than it was before enclosure. Nature may restore even nitrates to the soil by means of bacteria, alone or in conjunction with leguminous plants like clover; land may even appreciate in fertility if abundant wild growth rots and forms a rich mould, especially if large animals are common.

12. Capital which is definitely sunk, and cannot be removed, may thus be considered as an addition to fertility; if the soil is improved by its application, the productivity of the improved soil will be governed by the same principles which Ricardo noted in the case of the "original" powers.

The natural fertility of some soils is so great, and the recuperative power of exhausted land is so marked, that Carey's statement calls forth extreme scepticism. There is little doubt that in Belgium, in Holland, in France, and in Denmark there is much land which is immeasurably superior to the waste or heath which was its former condition; the difference may be put mainly to the credit of applied capital and labour; again, the productive-

ness of prairie or steppe represents a robbery culture of soils enriched by age-long deposits of mould and also by animals ; enormous outlay would be necessary to bring these tracts from a condition of exhaustion back to their original state. Granting these facts, it yet remains true that the natural fertility of the soil is a productive factor of vital importance. Extending the notion of " original " to all properties which are inseparable from the soil, and will not be exhausted by the next harvest, it is found that Ricardo's Theory of Rent, and the Law of Diminishing Returns implied in it, are true statements of tendency. The Theory of Rent will be more fully developed in a later chapter.

As we have seen, the Law is apparently limited by certain exceptions, *e.g.* the case of a potentially fertile swamp. Similarly, there are cases of bad management and under-cultivation which appear also to present exceptional features. Thus, if a capable farmer takes over a badly-managed farm, he may for a time obtain more than proportionate returns on his capital ; again, if he takes over a tract of unused land, the same thing may occur ; the land will rapidly improve under his hands, and be increasingly fruitful. Inevitably, however, this stage will pass, and diminishing returns will appear. Ricardian analysis must assume the existence of normally enlightened self-interest.

13. The above account has tacitly assumed, that no great development of agriculture has taken place during the increasingly intensive cultivation of land. Ricardo himself, however, noted the effect of improved methods on production. After noting that a diminution in the capital employed on land will produce the reverse effects to those described above, he proceeds :—" The same effects may,

**Effect of
Agricultural
Development.**

however, be produced when the wealth and population of a country are increased, if that increase is accompanied by such marked improvements in agriculture as shall have the same effect of diminishing the necessity of cultivating the poorer lands, or of expending the same amount of capital on the cultivation of the more fertile portions."

Agriculture is essentially conservative, but there is a steady development of farming methods, and present-day agriculture is immeasurably superior to that of mediæval times. Progress has, on occasion, been rapid, as it was during the agricultural revolution of the later eighteenth century; new crops were then introduced, and the possibilities of sheep and cattle were more fully utilised. By such improved methods, it was often possible to obtain the same produce on a less acreage, at a less though a more effectively applied outlay. The law of diminishing return ceased apparently to hold good.

14. Ricardo, however, notes two classes of improvements, and only the first leads to apparent increasing returns. "Improvements in agriculture are of two kinds: those which increase the productive powers of the land and those which enable us, by improving our machinery, to obtain its produce with less labour. . . . The improvements which increase the productive powers of the land are such as the more skilful rotation of crops or the better choice of manure. These enable us to obtain the same produce from a smaller quantity of land. If, by the introduction of a course of turnips, I can feed my sheep besides raising my corn, the land on which the sheep were before fed becomes unnecessary . . . (Other) improvements do not increase the productive powers of the land, but they enable us to obtain its produce with less labour. . . . Improvements in

Two Classes of Improvements.

agricultural implements, such as the plough and the thrashing machine, economy in the use of horses employed in husbandry, and a better knowledge of the veterinary art, are of this nature. . . . To obtain the same produce, less land cannot be cultivated."

Diminishing Return a Fact of Experience. 15. Thus the former class of improvements constitutes a real means of escape from the action of the above law, but the effect is purely temporary, unless agricultural progress continues. Cultivation (or stock raising) will be pushed to a new margin of intensive cultivation, and diminishing returns will again appear. If improvements are effective and continuous, a continually increasing food supply may be obtained under increasing returns; however, human experience has shown, up to the present, that an increased demand for agricultural produce is almost invariably accompanied by an intake of hitherto neglected land, as well as by an attempt to wring out an additional supply of produce from better land which offers an increasing resistance to further exploitation. Diminishing return is no inevitable law, but a hard fact of past and present experience. Ricardo's insistence and Carey's denials are alike explicable; the former lived in an old country, where land was intensively tilled and farmers were bound by custom; the latter saw a virgin soil, tilled by enterprising men crying for the capital and labour they could not obtain in sufficient abundance.

Influence of Price of Produce. 16. The law of diminishing returns refers to the actual physical produce obtained, and not to the money price it commands. As hinted above, a poor land near a large town may fetch a high rent; it may be cultivated very intensively so as to produce foods eagerly demanded in the large town; it may not be worth while to grow these pro-

ducts over wide tracts in the country. The produce of an acre of land tends towards a maximum of (say) wheat, and thus the utmost money price a wheat farmer can obtain is limited; near a town, however, he can grow other produce whose value, bulk for bulk, is greater than that of wheat. It remains true, however, that for any particular crop, the law of diminishing returns will hold good; again, the working of the law could not be defeated by a universal substitution of corn by those crops which are profitably grown near a town, for their money price would immediately fall and, in large quantities, they would prove an inefficient substitute for corn.

17. Stress has been laid on the case of food crops, but the same principle holds good for those **Fisheries.** goods which are of plant (and also animal) origin. Further, it may be said that the same law will apply in cases where gifts of nature, formerly present in superabundance, become appropriated as demands on them increase; the most convenient sources will be controlled first. In a new country, river fisheries are free and unappropriated, but in England the same process has taken place as in agriculture. Well-stocked streams are almost invariably in private hands, and are so valuable that they may fetch a high price for the sake of the fishing rights alone. Such rivers are used by rich men, and poorer anglers are obliged to fish inferior streams which they would neglect if the better streams were open to them. If an attempt were made to supply the needs of the country from these food sources, diminishing returns would quickly and sharply come into play; if our supply of deep-sea fish were suddenly cut off, the rents of the best streams might rise to a very high level.

The case of shore fisheries is similar, when considered from an international standpoint, for each nation jealously

retains its rights. The case of deep-sea fishing is more doubtful ; some believe that the huge annual toll is small compared with the total supply, but others think that any decided increase in the annual catch in the richer areas would lead to an impoverishment which would compel a partial movement to more barren or more distant seas.

Fisheries, however, differ in one respect from agriculture. Man has carefully studied the nature of crops, and has chosen those which respond most effectively to seasonal changes ; when most impotent to master natural forces, he has been able so to guide them by planting those things he wished to grow, that he has obtained a fairly steady supply of produce. In the case of fisheries, he possesses hardly any control at all over natural forces ; river culture is possible on a small scale, but deep-sea fisheries are, at present, practically beyond man's control. It is possible that man may deplete the stock ; there is no possibility at present of laying out capital and labour for the purpose of maintaining a steady supply.

18. In this connection, fisheries are intermediate between agriculture and mining. If a fishing-ground is depleted, and then left to itself, it will tend to recover its former condition. Mines have no such recuperative power ; mining is a purely " extractive " industry. Nature presents a store of free gifts, but when a particular mine is worked out, there is no possibility of any renewal of supplies. There is a kind of diminishing return in that the application of capital exhausts the most accessible supplies ; further outlay can then obtain minerals only from less convenient or poorer parts of the mine ; alternatively, the opening up of new and poorer mines will be necessary ; the analogy is very imperfect, and the absence of any annual renewal of produce must be carefully noticed.

Such renewal, which is essentially organic, pivots on the question of energy. In mediaeval times, this was obtained mainly from timber, except where the muscles of man or beast were utilised. The energy which is required for the development of plant life is often retained in the dead plants. Such plant storage of energy, however, is so slow (*e.g.* peat) that diminishing return is particularly important in this connection, as in timber growing. To-day, therefore, energy is mainly extracted from a store of coal and oil, which is for present purposes as fixed in quantity and as irreplaceable as gold or diamonds. Anxious attempts are made to discover alternative sources. Water power is governed by the same laws as land, and a waterfall used for electrical purposes may be compared to a fertile plot of land. The vast stores of energy in the wind and waves, and the colossal interatomic energy of ordinary matter are probable sources of future supply, but the application of economic laws to them is premature.

**Possible
Future
Development.** 19. It is not probable that the supply of agricultural products will remain for ever in the stage of diminishing returns if the present mechanical civilisation continues. The progress of science has been so startling that hardly any limit can be set to possible future triumphs. Immense stores of nitrogen and carbon dioxide are ready to supply an indefinite amount of food when chemistry solves the mysteries of organic syntheses, and when physics learns to control the world's energy. It is conceivable that the limitation imposed by the law of diminishing return will then be removed. Already, the artificial synthesis of nitrates has become an important industry in Norway, where water-power is utilised.

20. At present, however, land (in the narrower sense) is an essential agent of production. First
Land essential and most indispensable of its uses is the
at Present. supply of the agricultural products used as human food. Agriculture is an end in itself in so far as it directly supplies basal human wants. Stock raising and tillage are great branches of farming, but they are inextricably combined, though distinct in method, and each gains by the presence of the other; diminishing returns are a feature of stock-raising no less than of tillage. Economics, however, in relation to present-day conditions is largely concerned with another great method of production known as manufacture, this term has lost its old meaning of hand work, and has obtained that of large-scale production in localised centres.

To-day, agriculture is of vital importance as a feeder of manufacture; raw materials are the second great class of agricultural products, and they are obtained both from tillage and from animal sources. Commodities like cotton, wool, silk, and linen need only be mentioned to show the dependence of manufacture on organic products. Now the laws which govern food production hold equally in the case of raw materials and, through these latter, manufacture is limited and sometimes crippled by nature's limitations, though quite other principles are concerned in the actual manufacturing processes. It will be found in Chapter VII. that, in manufacture, the larger the scale on which production takes place the more cheaply, up to a certain point, will the goods in question be made.

REFERENCE :—*Ricardo*. Principles of Political Economy and Taxation.

CHAPTER V.

AGENTS OF PRODUCTION.—LABOUR.

1. In early times, human wants were satisfied mainly by means of nature's free gifts; although
Labour is man's energies were turned to full account,
Exertion. goods were usually appropriated in a form suitable for immediate consumption. The quest for food might entail great hardship, but when it was obtained, no elaborate preparation was necessary. Man had definite wants which could be satisfied by efforts whose aim was the procuring of definite objects which he desired. In spite of the complexity of modern industrialism, a result of the development of capitalism, the essential processes have remained always the same. Wants call forth desires, which necessitate exertions, painful or otherwise, in order that these desires may be satisfied.

It must be repeated that the meaning of "labour" in economic analysis is that of exertion; in descriptive Economics we may often use the term to represent the mass of labourers, but the word should always be used with caution. As an element of production, labour is literally indispensable, for even the wayside fruits must be gathered before use; labour alone, however, is barren, for the hardest exertions are fruitless if nature lends no assistance; even muscular exercises require a well-nourished body. "Land" and labour (in its widest sense) are sufficient, in effective combination, under proper

conditions, to satisfy the primary needs. In a special sense, these are the essential agents of production.

Mere effort is not labour in the economic sense; labour is directive, the aim being the production of wealth. Even savage life shows countless examples of the adaptation of means to an end which are the small beginnings of the great industrial systems that are the triumphs of human organisation. Labour is twofold; there is actual muscular movement and also there is a mental effort to direct the work done so as to make physical labour a minimum.

Peculiarities of Labour—vested in Individuals. 2. Labour presents peculiarities which differentiate it from the other agents of production. In a primitive state, we note that man is at once a producer and a consumer of the object he appropriates, amid the complexities of civilisation, the same general principle holds good. Man now labours in an ordered fashion, and the actual thing he produces he is not likely to consume himself; as a result of making commodities for others, however, he is enabled to consume other goods in their place. Man remains the source and organiser of the efforts necessary to satisfy his own personal wants. Economics may often treat the labourer as an example of wealth in the same way as wool or cotton are wealth, and for many purposes it is permissible and useful to do so; the science, however, never loses sight of the fact that labour is vested in the individuals for whom production exists. Economists should not be censured for treating human labour in an objective fashion in order that economic science may be forwarded, but blame should be reserved for those who forget that the labourer is also a human being.

A free man may control his life, but in modern industrialism he may continue to live only by adaptation

most men must voluntarily sell part of their freedom that they may keep their life, because a man cannot separate himself from his industrial capabilities. He may move to and fro, and the external goods he controls may be moved independently of him, but he cannot divorce his labour from himself. A purely selfish employer considers only the labour of his workmen but, in giving this, the labourers so far lose their personal freedom; a labourer must give all or none.

3. The other peculiarity is that "Labour will not keep"

(Thornton): this fact may have consequences
 —Will not
 Keep. equally unpleasant for the labourer. If a
 man buys a store of durable goods which
 will not depreciate in quality, he is more fortunate than if
 he possesses a large quantity of food which he cannot sell
 and which will spoil in a short time. Just as human
 wants are satiable, so a man's capacity for labour is
 limited. Under certain conditions, a doubling of effort
 may result in more than doubled produce but, sooner or
 later, an increase of exertion produces a less than pro-
 portionate effect. A man cannot crowd a day's work into
 an hour, however strenuously he toils. In certain employ-
 ments, the best work is done in spurts, but it still follows
 that if a man loses an opportunity of doing work, the lost
 ground can never be regained. The ordinary man works
 fairly steadily, and a cessation of work must generally
 result in pure loss. Labour is a flow of matter, energy
 and direction capable of producing wealth; it is not a store.

4. In the last analysis, labour is a form of negative
 satisfaction; we have seen that when com-
 modities are successively consumed, utilities
 diminish until they become disutilities; to
 speak mathematically, the utilities become
 negative; disutility bears to utility the same relation as a

Labour is
 Negative
 Satisfaction.

debt to a credit. Just as consumption may be pushed forward until it disgusts, so, inversely, labour may be so lightened that it becomes pure pleasure. Thus labour is not a portion torn out of a man's life, but a part of his being. Here is the secret of the contests between Economics and idealism; Economics attempts, for some purposes, to separate the wealth-producing side of man from the whole; the greatest economists have realised, however, that man and his producing faculties are so deeply and essentially combined that Economics must leave the ultimate meaning of productive processes to other studies.

5. Labour, like satisfaction, involves both intensity and time. Purely muscular effort may be easily measured by the mechanical unit, the foot pound, which is the work required to be done to lift a pound weight through the height of a foot; intensity of effort may be measured by the number of foot pounds exerted each minute, or by the larger unit "horse-power." Physical effort alone, however, is useless; the directive work of the brain is so indispensable, that little is gained by separating muscular labour from brain work. The latter cannot be measured directly, for the physical processes involved are too complicated; further, the finest directive work often involves a minimum of fatigue. A rough standard may often be supplied by money; the two types of labour are so far alternative that cases occur where a labourer is in doubt as to whether to do muscular or directive work; an employer also may be in doubt as to whether to take on additional manual workers or brain workers; money return will then be the deciding factor. Further, there is no sharp distinction between hand and brain work; an unskilled labourer uses his mental powers, however instinctively, to direct his

**Involves
Intensity
and Time.**

physical efforts; again, strenuous organising work may fatigue the system as effectively and perhaps more permanently than does muscular effort.

6. Economics is thus true to life when it treats muscular and mental labour as of the same order; a clerk who can earn extra money either by typewriting or by gardening will balance one course against the other; if unprejudiced, he will probably choose the latter. The same law of decreasing utility, *i.e.* of increasing disutility, will hold in each case; thus the disutility of clerical work at the end of the day may outweigh that of a period of manual work. The clerk will be able to give a rough money estimate of each disutility, and can compare such different quantities as those of muscular and of mental effort.

7. Increasing disutility is held in check by the fact of recuperation. Muscular or mental fatigue disappears after a short rest; disutility thus rises during continuous work, and falls again between working periods: further, the two types of effort are so far independent that mental work may rest the muscles, and physical work may rest the brain.

8. Directive effort shades on one side into what is often included in the term organisation. Unless otherwise specified, labour will be held to include all forms of economic effort, *i.e.* all effort which can be assessed in terms of money. Wealth can normally be produced only by efforts which, on the whole, are painful; the total disutility which must be incurred in order that a commodity may be produced is called its real cost of production; the money which must be given to the producer so that he may be persuaded to make the commodity is called the Money Cost or the Expenses of Production. If a man makes an article for

**Muscular and
Mental Work
of same Order.**

Recuperation.

**Money
Cost.**

his own use, he estimates that the utility of the object is not less than the "pains" incurred in making it. If the market price of the article is less than the money valuation which the producer puts on the labour necessary to make it himself, he will normally prefer to buy it. The personal Real Cost is then greater than the market price, *i.e.* than Expenses of Production to the normal employer.

9. The Cost of Production of a manufactured article is the sum of the painful efforts involved in making it; the Money Cost¹ is the price the manufacturer must pay in order that these efforts may be forthcoming. The labourer balances his own Real Cost against the money price, or wage, that he receives; the master is concerned with externals, and he balances the money he pays out against the money he receives, allowing for the Real Cost of his own efforts. He is more interested in the work done by his men than in their feelings.

Thus an individual producer, making goods for a market, thinks in terms of Money Cost but, from a social standpoint, money is merely a convenient method of adapting supply to demand, personal efforts and satisfactions being the ultimate realities. A weaver makes cloth, not for his own use, but because an Asiatic (say) requires clothing; he works for a master, who acts simply as an intermediary, giving him money with which he purchases fruit from America, availing himself of the labour of an American negro. Commodities are brought over the seas, and much money changes hands, but the ultimate result is that in exchange for his efforts, the weaver receives certain satisfactions. Real Cost is the more intrinsically important, but it is Money Cost which the economist must study more particularly.

¹ Or Expenses of Production.

10. Labour is quantitative, *i.e.* it may be measured; it involves time as well as amount. It is also qualitative, *i.e.* it cannot be measured by a purely physical standard, for work of the same intensity for the same duration may produce very different utilities, and this holds more particularly for mental work. Thus a new term is required; the wealth which a man can produce in a given time measures his efficiency, though it involves quality as well as quantity and intensity. It may be gauged by the money measure; efficiencies can be directly compared in this way. Thus the world's production is limited by man's willingness to work, and also by his efficiency.

11. It is obviously limited by the amount of available labour, *i.e.* by the working population, and in turn depends on the total population. The name of Malthus dominates this subject as that of Ricardo does the study of rent, but the methods of these men were very dissimilar. Malthus had no analytical ability, but reached his results by patient historical research; he made a careful study of the rate of increase of population in different regions, and attempted to find reasons for what he observed; pessimism is the note of his earlier work.

Rousseau's ideas of the instinctive goodness of the human heart were eagerly received by Englishmen like Godwin, and Malthus' father accepted them. Perhaps because of the "instinctive reaction of child against parent" (Bagehot), Malthus revolted against the prevailing optimism which hinted that if human restraints could be removed, a Utopia would be at hand. Malthus' objection was simple; he said that if a perfect state could possibly arrive, perfection must soon be destroyed by the mere increase of population; the pressure of population

on the food supply would soon pull down the standard of comfort (1798).

12. Malthus materially altered his views in the second edition of his *Essay on the Principle of Population*; he then considered the hope that personal restraint might prove an effective factor in the check to the increase of population. His argument was no longer an effective reply to idealistic schemes, but his new position was nearer to the truth. At first, his researches led him to believe that every community which he studied would have enormously and quickly increased in numbers but for the presence of certain preventive checks, placed under the head of "vice" or "misery"; notable examples were, war, disease, and scarcity. Later, he added, "the action of another check to population, which does not come under the head either of vice or misery, . . . self-restraint, moral or prudential."

Again by the aid of historical research, Malthus showed that no populous country had ever been able to obtain necessities so easily and so abundantly as in a thinly populated region, and that the greater the population, the greater was the difficulty in producing food.

13. Malthus wrote in a time of disillusionment, for the French Revolution had bitterly disappointed progressive thinkers, and in addition, the time was one of great hardship, the working classes living in misery, while the Poor Law actually encouraged the growth in population of the poorer classes. Around him he saw masses of men pressed by dire necessity. It is not surprising that Malthus drew the same dark picture of the past that was presented to him at the end of the eighteenth century; he assumed that the population of England would continue to increase, while the condition of the lower classes deteriorated yet

more. Malthus is to be judged as a prophet rather than as a historian, and as an economist rather than as a statistician. "He did not in the least know that he was aiding in the foundation of an abstract science. He thought that he was dealing with real men and that the principles which he expounded were all those that affected his subject" (Bagehot). Thus, almost by accident, by an unlikely path, Malthus gave the doctrine which forms an integral portion of Economics.

14. The Malthusian doctrine was developed by able economists, and was used by them to round off their own doctrines; on the other hand, the Ricardian law of rent had been dimly foreshadowed by Malthus, and indeed, the law of diminishing returns is the cause of the efficacy of the scarcity check to population. He is over-definite in his actual statement, but in essence he is right. "A perfectly happy and virtuous community . . . will double every twenty-five years, but there can be no similar increase in their food. The best lands are taken up first, then the next best, then the inferior, at last the worst; at each stage the amount of food produced is less than before. By nature, human food increases in a slow arithmetical ratio; man himself increases in a quick geometrical ratio, unless want and vice stop him."

The term "ratio," though mathematical in form, must not be taken literally; Malthus supposed it possible that a doubled population might double the food supply, though this was unlikely. Even so, he argued, a further doubling of population would produce a less actual increase of food supply than before, but it might be conceded that for the sake of argument each successive doubling would result in the same increase of produce. Then, speaking mathematically, population would increase in a geometrical

progression, and food in an arithmetical progression. If the original population and produce are each denoted by 1, the population in successive periods (*e.g.* of 25 years, this being about the time in which a quickly growing population will double its numbers) will be given by:—

1 2 4 8 16 32 64 (after 150 years) . . .

If Malthus' statement is rigidly true, the produce in successive similar periods will be—

1 2 3 4 5 6 7 (after 150 years) . . .

If the statement is exact, it is plain that an increased population will very soon be faced with starvation, and Malthus believed that the difficulty of producing the extra food would be even greater than the arithmetical statement supposes.

15. Malthus used this arithmetical illustration to make his principle clear, and we cannot suppose **Real basis of Malthusianism.** that he believed it to represent the facts exactly. Even if it proved false in this form, the incontestable facts on which the principle, so far as it is true, is based, must be carefully considered by economists. If we translate the principle as "population increases faster than food supply," it is seen that Malthusianism is simply the law of diminishing returns carried to its logical conclusion. We saw that marginal return decreased as capital and labour was progressively applied, provided that no agricultural (or transport) improvements were supposed, and it may be assumed provisionally that capital roughly keeps pace with labour. An increasing population in an already thickly populated region can obtain its extra food supply in two ways only (assuming for the present that food cannot be obtained from abroad): it can till lands which the smaller population considered not to repay cultivation, or it can till the old land more intensively, thus obtaining a smaller marginal return to outlay.

When the population increases, each additional labourer will obtain (on the average) less produce than did each labourer when the land was less intensively tilled. Thus an increasing population will find that the food surplus on which a material civilisation must be built will gradually be squeezed out; in time, the masses will be reduced to the necessity of hard work for the mere satisfaction of the primary needs only; at last, the community will be in the grip of starvation.

There is no flaw in the reasoning; diminishing return is assumed as a premise, but this principle is abundantly verified by experience. This inspirer of Darwin, this pessimist who foreshadowed the doctrine of the Survival of the Fittest saw that if such forces were given free play there must be a check to natural increase, *i.e.* a lessening of the geometrical ratio, or else a steady movement towards the final grave of human hopes. Malthus seemed only to see the relentless pressure of external nature on man's existence, but within limits, his observations were clear and correct.

16. There is a way out, apart from the hope that an intelligent moral restraint will check inordinate increase, and from the expectation that at some future date the practical application of the precepts of Eugenics may tend in the same direction. First, the evil day may be pushed back by the development of communications, by which the produce of those regions where the law of diminishing returns is not yet fully effective can support the inhabitants of populous lands; this process is only a palliative, for, in a few centuries, at the present rate of increase, the world will be so thickly peopled that diminishing return will be the universal rule. Already there are signs that countries like the United States are absorbing a progressively greater proportion of

their agricultural produce, leaving a lessened surplus for the use of thickly populated regions:

Diminishing return is here, as so often elsewhere, the key to the situation. If this difficulty can be removed, Malthusianism is no longer a pressing question. Malthus based his prophecies on past experience, and assumed the continued working of diminishing return. We found, however, that the latter law assumed the constancy of agricultural methods, and that improvements in cultivation and also in transport might raise the marginal return to the same capital, or else allow a larger produce to be grown at an increased total outlay, but under the same conditions of marginal return. Thus an increasing population might develop its powers of organisation as well as of individual ability, so that the control over nature might be extended; an increased food supply might then be possible, involving a constant or even diminished marginal outlay, compared with that necessary for the former food supply.

Diminishing return means that marginal return will steadily decrease as production increases, but in the long run this effect may be more than counteracted by the spasmodic increase in marginal return caused by discoveries, rare indeed, but perhaps sufficient to overcome the results of generations of increasingly intensive culture under disadvantageous conditions. It must be noted also that it is just in the case of rapid increase of population, when growing hardship calls for inventive ability and a concentration of enterprising men in large towns gives an opportunity for such ability, that epoch-making discovery is most likely. If the possibility suggested in the previous chapter is realised, and food production is converted from conditions of decreasing to those of increasing return by the march of science, then Malthusianism in its original form will be dead.

17. More than a century of experience has tested the doctrine of Malthus. The central theory has not been disproved, but though population has greatly increased, the conditions have not been such as to provide a direct proof of the doctrine. Pessimistic expectations have not been realised, but this is due to causes which Malthus could not be expected to foresee. The opening up of new countries, of the United States and Australia, and, later, of the Argentine, has provided the rapidly increasing European population with an abundant supply of cheap food, so that there is now less fear of world shortage (in normal times) than there was when Malthus wrote. The extensive farming of virgin soils, rich with the accumulated mould of ages, the intensive tillage of other lands, made possible by improved methods, and the startling improvements in transport have combined to ease the situation. Yet, the "Principle of Population" (1798) remains as an accurate statement of tendencies, and Malthus' prophecies will inevitably be fulfilled, if diminishing returns continue to act, and if population increases as it has done in the past.

Thus nature's limitations may be overcome in two ways, by a more efficient food production or by a restriction of population. In the past, restriction has often worked blindly and, as is the case so commonly, the external forces tending to change men's habits have called out instinctive human efforts which tend to oppose those external forces. War has been one of the most effective methods of defeating the working of the law of diminishing returns. Most past and present wars are economic in origin, in part at any rate. This is plainly seen in the case of nomadic raids; time after time the Central Asian population has grown beyond its food resources or, conversely, a change in climate has lessened the food

supply; in each case, the fertile lands have been raided. If a whole region has been over-populated, the struggles for mastery have often diminished the population to such an extent that food supply has become sufficient under the new conditions. The same results have occurred in the conflicts between comparatively populous states, though economic struggle may then be based on the possession of commodities other than food; none the less, though the causation is masked, resulting decrease of population relieves the pressure on food supply.

In other ways also, the working of the principle has led to a cheapening of human life. Apart from the direct murder of children, old people, and other non-productive individuals (*e.g.* the killing of girl babies in China and elsewhere) carelessness was probably a considerable element in the destructiveness of pestilences in past times. The effect of a great plague can be realised in the case of the Black Death; when the plague ceased, the position of the labouring classes was relatively improved; this is explained partly, though not wholly, by restriction of tillage, which raised marginal return and relieved the pressure on the poorer lands.

18. War and disease work their will in populous countries because they aid economic forces, but man himself can and does deliberately slow down his rate of increase. Possibly there has always been a tendency towards a lessened birth-rate in hard times, though among primitive peoples, such control would be instinctive rather than deliberate. To-day, the doctrine of Neo-Malthusianism is obtaining a strong hold on civilised peoples. There is no doubt that married people are becoming more inclined to limit the number of their offspring, while concentrating their resources on the lessened number of children they are willing to rear.

Restriction
of Population.

This tendency is encouraged by the ideas of the present-day representatives of Malthus. The new pessimism advocates parental action which would not always have been approved by Malthus, but the motive of the Neo-Malthusians is still the fear that population will outgrow food supply.

19. The birth rate is a variable quantity from country to country, from climate to climate, and from time to time. Natural increase depends on the ages of fertility, but in civilised countries the institution of marriage presents a check to increase. Our knowledge of this subject is derived almost wholly from inductive sources, and we gather that fertility tends to be greatest in hot countries, where also full development occurs at an early age.

Natural fertility is probably greater among savages than among civilised men, and is greater in agricultural than in industrial communities. It is certain that fertility is greatly influenced by environment, *e g.* climate, and probably food and habits of life are controlling factors; heredity is also of the greatest importance. The high birth rate of the Highlanders, the Irish, and of our own farm labourers contrasts markedly with the sterility of the true Londoner, so marked that it has been stated, perhaps not too extravagantly, that an East-End family dies out in three or four generations.

This is not surprising when we remember that the lessening of the fertility of the town dweller is reinforced by the action of deliberate checks to population, not always desirable in themselves. In France, habits of restraint have spread even to the agricultural labourers, and a declining population has resulted. This is partly the result of the desire of parents to bring up their children to a standard of living at least equal to their own, a

tendency developing in all the countries of Western Europe which have developed a high material civilisation. If colonists settle in a new country, they may recover their power of increase, but as the country fills up, natural fertility decreases owing to the demands which a high civilisation makes upon nervous energy; the struggle to maintain a standard of life in face of the law of diminishing return leads to a further slackening of the birth rate through deliberate restraint. In France, the birth rate has so far slackened that the gaps caused by death and emigration cannot be filled.

20. In England, the decline in the rate of the increase of the population (not the absolute decline, as in France) is largely the effect of later marriages. In a highly developed country with an abundant food supply, diminishing return is not the directly controlling factor in population changes; population tends to become stationary because men refuse to lower the standard of life. There is another type of stationary population, however; in China, the people till the ground so intensively that a numerous population live on bare necessities, and cannot increase much more, for they are not able to lower their standard of life. A country of the latter type is at the mercy of harvests, and numbers are sensitive to changes in food supply; a wheat-using people like the English, however, can fall back on substitutes when the need arises, and neither birth rate nor death rate are much affected. Ireland before the potato famine was a land of high fertility and early marriages, though emigration kept down the rate of increase; England, on the other hand, has raised its standard of life to a degree hardly suspected till she passed through the Great War little affected by forced reliance on inferior foodstuffs.

Decline in
Civilised
Countries.

Englishmen tend to marry only when they have a prospect of a higher standard of living than that of their parents: the moral restraint thus practised is a most important cause of the declining rate of increase. A peculiarity shared by other European countries is that the declining natural fertility as well as the later marriages and more effective restraint so noticeable to-day is most especially to be found among the more comfortable classes; the poorest people still marry early and have large families. So far as civilisation is enfeebling, it is self-destructive, for the poorer classes increase most quickly. This is regrettable in that those children are born who are likely to possess the fewest hereditary advantages; it is to the good, however, that the newer generation should come from a presumably naturally vigorous stock.

The slower rate of increase in England and similar countries may be imputed mainly to increased restraint in some form or other, though as civilisation develops and makes further demands on nervous energy it is probable that natural fertility progressively declines. Yet the external checks to population, though diminishing in importance, are still effective. The young of the lower animals are independent from an early stage, and species frequently rely on a fecundity almost incredible to perpetuate itself. Man is slowly overcoming the external obstacles but, in accordance with biological experience, his fecundity diminishes as he masters environment.

21. Population is concerned with death rate, as well as birth rate. A virile people in a thinly populated country where good land is abundant will multiply at a great rate, and double its numbers in twenty-five years or less; restraint is almost absent. Such a people, however, is liable to disease, and the death rate will be very high, while if recurrent famines

are the rule, as formerly in India and Egypt, starvation may prove an effective population check. In England, the lowering of the birth rate among the more comfortable classes is fortunately accompanied by a marked diminution of the death rate, largely due to an extension of parental care far beyond the period common among backward peoples.

To sum up, we may say that it is almost a law that as people become civilised and live in industrial towns, the birth rate and the death rate alike tend to fall, and the marriage age to rise; in hot climates, where food is abundant, the birth and the death rate tend to be alike high, a dense stationary population being the final outcome.

22. Population affects the supply of labour, but the two terms are not identical. Economic supply is always a relative term, for supply varies with the price at which a commodity is offered. Under certain conditions, the supply of labour might comprise most of the existing population. During the war, the new conditions called out a supply of labour from men and women who hitherto had added little or nothing to the national dividend. Population fixes the limits of labour supply, which can vary from the minimum required to produce necessities for the whole population to a maximum defined by the total number of people able to do work.

23. Labour supply, however, is not a mere number, for the quality of the workers is as important as their quality. Industrial efficiency depends largely on the health and strength of the population. These are not only necessary in themselves, but are conditions, in the absence of which the other factors of efficiency are valueless. A regular supply of pure water is necessary, and also of good, nourishing food, sufficiently

varied to provide not only the requisites for the building up of tissue, but also the salts and acids necessary for continued health. We have seen the importance of a wheat diet, which allows of the descent to a maize or potato diet in hard times, but wheat is in itself preferable to substitutes. It is commonly believed that the substitutes for butter and other foods which were so invaluable during the war have done lasting harm to the physique of the nation, though the effects have been hidden. It is certain, at least, that food which is just good enough to sustain life does not promote industrial efficiency.

Good feeding is not merely a question of abundance, but requires knowledge and intelligence not always found among the worst-fed classes, while men who are placed beyond want may be ill-nourished too. So much food is wasted by uneconomical consumption that an immense saving is possible in times of shortage. War experience, especially in Germany, has shown that efficiency may be maintained for long periods by a careful husbandry of resources, though the process may easily be carried too far. A disciplined population, living on scientific rations, could so economise on foodstuffs as to defer the pressure on good land; the same experience showed the possibility of avoiding the full effects of the sudden onset of diminishing return which seemed bound to follow the shrinkage of transport facilities. The effect of food consumption on efficiency has not yet received sufficient attention, in respect either to over- or under- consumption.

Shelter is necessary to efficiency, and fortunately most labourers in civilised countries possess houses, but again, lack of means often necessitates the absence of invaluable comforts; the best-equipped houses may be badly ventilated or otherwise misused through ignorance. A comfortable home, warmed, ventilated, and cheerfully

furnished may be an invaluable aid to efficiency by its action on physical and mental health. Few problems are more pressing than that of the lowering of efficiency by cramped, insanitary, back-to-back houses, huddled in mean streets in a foul and smoky atmosphere.

Suitable clothing is also of great importance in our climate; the want of it is one of the chief causes of ill-health, which results in a cessation of work or, more insiduously, in lowered vitality which is a prime cause of inefficiency. Evils due to lack of food, warmth and clothing, especially among the poorer classes are the more dangerous in that a lowered vitality tends to be transmitted to the next generation.

Efficiency is deeply affected by the surroundings in which work is done. The effects of unhealthy trades like lead-glazing are obvious, but the whole atmosphere of much, perhaps the most of modern industrial life is thoroughly depressing; there is a serious loss of efficiency through the consequent lowering of mental tone. Again, open-air work, if not too exhausting, may be very pleasurable, and the effect on efficiency is beneficial; even indoor work may be done joyfully, and the output will be for that reason increased or improved. A few manufacturers have realised the effect of pleasant surroundings, and the influence on production has been very marked. The argument that some workers, *e.g.* miners, thrive and are productive under unpleasant conditions is met by the fact that such are picked men, exceptional in physique and stamina.

24. More subtle, but equally real, is the effect of general environment. The artisan's love of sport is an instinctive feeling, prompting him so to use his leisure as to repair the damage done by exhausting or unpleasant work. A wiser use of leisure is conceivable,

but recreation serves a positive purpose in promoting efficiency. An industrial town is usually mean and drab; town life also, even under perfect conditions has a harmful effect on the nervous system, even while it stimulates and quickens the intellect. At its worst, town life takes men from healthy surroundings, where the purer pleasures are a free gift of nature; it bribes him into acquiescence in a mechanical existence in which he produces wealth feverishly at a cost of real efficiency to himself or his children. A town environment is a help to a particular form of production, but it is conceivable that the amazing mechanical progress made since the Industrial Revolution of the eighteenth century has in some ways been purchased at too high a cost.

Even from the narrow utilitarian standpoint it is probable that the evils of town life will, in a few generations, produce a stock of workers of much less efficiency than the present artisan class, unless favourable developments occur. At present, the urban populations reach a surprisingly high standard because they continuously attract the most able and vigorous country dwellers. Under present conditions, the average industrial town cannot provide a wholly suitable environment, and if there were no healthy countryside, there would probably be a gradual decline of efficiency.

Again, each individual worker lives in surroundings which affect his productive capacity; a suitable home life and a right use of leisure may greatly improve the quality of a man's work. Efficiency contains two elements, natural ability (physical, mental, and moral) and also the power of adaptation to surroundings. The former is largely decided at birth, and the best or worst education can do little to interfere with natural development. However, it cannot be denied that the deliberate selection of a suitable

environment which we call education contains great possibilities of stimulation of right instincts, and thus develops powers which might otherwise be wasted. Education does not differ from the training process in home, workshop, or even playground but, so far as it is systematised, it is a more powerful factor for good. Lastly, the fine work done by disinterested men in ameliorating the conditions of slum life has a permanent effect on the condition of the poorer classes.

25. There is probably no very successful business man in England who has not received a sound Education. early training. Illiteracy is so rare that elementary education is regarded as a common heritage, but the economic results of such training have been far-reaching. Technical training, based on the "ad hoc" principle of teaching those things which are immediately necessary for a particular trade or problem has done marvellous work, especially in Germany, where the careful teaching (*e.g.*) of research chemists before the war made that country the chemical workshop of Europe. The presence of practical and recognisable difficulties, the direct stimulus of present problems, the concentration of knowledge and experience directed to a definite end, combine to make this a powerful method of moulding man's industrial character. The value of "ad hoc" training was seen in the "citizen army" during the war. Men whose habits were set, middle-aged men who had worked at one trade since childhood were quickly and "intensively" taught trades completely new to them; painters drove motor lorries, and drove them well, while chauffeurs became good sign painters. Millions of men were taught new methods, and quickly mastered them.

Technical education produces quick and sometimes startling results, but does not grip the mind of the worker, and

its effects tend to disappear when the immediate need is gone. Specialised education cannot replace the general training of the mind, though it may be a necessary aid. "Ad hoc" methods may serve their purpose so long as conditions do not vary, but the man who has had a general education can often adapt himself to new circumstances better than his fellow who has been trained to a particular process. There is so much common to (say) all textile trades that a man of general ability who knows one process can easily and quickly transfer his skill to another; this principle can be extended by an intelligent general education, for a truly educated man can at need be resourceful and apply his knowledge in almost any sphere, once he has mastered the special difficulties of any particular trade. There is much manual labour which requires a minimum of intelligence, as does some clerical work (when we consider the spread of elementary education), but for much other production, especially of a higher type, an exceptional intelligence or a careful general training is necessary.

Education completes the work done in the home, but a limit to derived efficiency is set by natural ability; much of the effect ascribed to education (good or bad), is attributable to the natural development of the individual. Environment is limited by heredity, of which the laws are as yet unknown. Mendelism and other biological methods may one day solve the problem; we do know that specialised ability tends to run in families, but it is hard to say whether this is due to heredity or to an immersion of the growing child in a particular atmosphere. The question of genius is peculiarly difficult; a man may achieve supreme excellence without education, general or special, and environment and heredity may give no satisfactory explanation of his abilities. It is needful simply to accept genius when it appears, and it is to a nation's

interest to develop it whenever possible. The higher education of civilised countries is an effective means of discovering and of training exceptional ability; many fine geniuses have in the past been wasted through placing them in a sphere for which they were ill-fitted.

So far as industry is stable, and relies on familiar methods, a workman may be fitted for his place in the industrial system by apprenticeship or technical education, but when methods are developing and changing quickly, general ability and adaptability are essential; thus in a growing system like our own, there is an increasing opportunity for genius; general education, applied even to moderate intelligences is, on the whole, of more permanent value than specialised training.

Labour is thus limited in quantity by population, in quality by natural ability, by environment, and by educable capacity.

REFERENCE :—*Malthus*. Essay on the Principle of Population.

CHAPTER VI.

AGENTS OF PRODUCTION.—CAPITAL.¹

1. Land and labour are the essential agents of production, but it does not follow that they are the only agents which aid production at the present day. Primitive man, influenced by immediate need, makes desirable things by using surrounding objects, just as the soldier in the field treats all property as a free gift of nature, improvising his material comforts without money cost, with the exercise of little forethought. In the factory, however, a huge amount of material is made with comparative little labour or assistance from nature. The aims of production in the two cases are the same; the methods are dissimilar.

The key to the difference lies in the word "waiting," a better term than the "abstinence" used by earlier economists. Savages may at times make implements which in themselves give little 'direct satisfaction, but which are used as aids to labour in making goods which can give direct pleasure. These may rightly be regarded as the beginnings of capital, and it is instructive to study them for the light they throw on modern industrialism.

2. A savage may find that his immediate wants are satisfied, but that he might vary his food supply and clothe himself better if he could hunt more effectively. He may then work with the object of making an article which will bring

**Savage
Economy.**

¹ See pp. 503-505.

satisfaction at a later time; his wants may be more abundantly satisfied, but he will have to "wait" before receiving his reward. Such an instrument is true capital. It is not necessary to suppose that the making of the implement is accompanied by painful exertion; the actual construction may give pleasure, but if there is a deferred satisfaction in view, the article is capital.

3. The vagueness of the term "capital" has already been noted, but though the word represents a part, and a varying part of wealth, there is always in it the idea of deferred enjoyment with a view to a further satisfaction which is expected to compensate for the immediate pleasure lost, as well as for the postponement of pleasure. A soldier may work hard for an evening to improvise a stove; he gives up his present leisure, but is compensated, not only for the actual amount of his trouble, but also for the fact that he is doing present labour. With most men, a prospective pleasure is discounted, for it is not valued so highly as a present pleasure which is estimated to be of the same intensity.

The term "capital" must be considered relatively to intended uses, for the same article may or may not be called capital according as it is consumed for its own sake or for further production. Even a single act of consumption may be regarded as a use of capital by one man and not by another; a farmer who gives a meal to his labourers regards the outlay as necessary capital, but the men may think of the meal simply as a source of gratification. Even a labourer may regard his meal as consumption of capital, if he thinks of it as supplying him with the necessary efficiency which will help him to earn his wages. Thus the scope of the term varies from man to man, from trade to trade, and from time to time.

4. The history of capital shows it in many guises. Capital to us usually means money, earmarked for a special purpose, because money can buy the essential aids to production ; so far as capital is other wealth, we generally regard it as machinery. These preconceptions must be forgotten when dealing with other times, especially when considering agriculture, for farming capital is less permanent in character than industrial capital. Thus, in this chapter, capital is not limited in meaning to Fixed Capital, nor again will it be considered as identical with wealth, but will primarily be treated as an agent of production present or past, agricultural or industrial.

The conception of capital as an aid to land and labour is "naturalist" as opposed to the "juristic" conception of some socialists (*e.g.* Lassalle) who regard capital as an enemy to labour (*i.e.* the labourers), in the sense that the owners of capital have obtained a strategic position, and use it without scruple. An economist cannot make this assumption, though he may or may not believe it to be true ; he must accept the undoubted fact that capital is an aid to production, and develop the consequences which follow. Social justice is a question of distribution, which cannot properly be understood till the analysis of production is completed ; for this analysis, capital must be regarded as an agent of production, whatever is the destination of the product. In certain controversial circles, "labour" and "capital" mean the labourers and the capitalists, but this use of the terms will be avoided in the present chapter. Capital, again, is often popularly used in the sense of "lucrative capital," implying the ownership of certain wealth which brings an income to a particular person.

5. Capital cannot of itself produce more capital or more wealth; it must be combined with land and labour, and directed by an organising mind; when this is understood, it is permissible to speak of the "productiveness" of capital. When used in the proper manner, capital is an essential factor in the manufacture of most modern commodities made on a large scale; a proportion of the resulting increase of wealth must be imputed to capital. It must, however, be noted that there is no magical or automatic increase in existing capital, for the existence of interest has led many to believe that money of itself breeds money, though the belief may have been disguised beneath subtler fallacies. Capital is simply the combination of land, labour, and intelligence, resulting in a commodity which is for a time left unconsumed so that it may be the more effective as an agent in further production. This is expressed by the term "prospectiveness" of capital. Productiveness is a quality it possesses in common with the other factors of production; prospectiveness is the quality which separates it from them.

Using an unsatisfactory but convenient term, capital consists of "productive" goods. "Consumption" goods, or, as the Austrian economists call them, goods of the "first order," rarely and accidentally become capital, which is thus derived from goods of the second and higher orders, i.e. "instrumental" goods. It is probable that any commodity may become capital under appropriate conditions; on the other hand, fixed capital may be thrown out of industrial employment. Thus a new process may bring an unknown substance into industrial use, just as certain rare elements which were practically chemists' playthings found a use in incandescent lighting which made them a decided aid to production; on the other

hand, tanks, which were highly specialised forms of fixed capital (using the term for a moment in a paradoxical sense), are now consumption goods, in that they are no longer used for quasi-productive purposes, but give an occasional direct utility as mementos.

6. The stock of wealth is best considered as a reservoir, which is used partly for present purposes and partly as a store which can be used in the future to greater advantage than at present. The connection between capital and wealth is shown very clearly in the case, say, of a sack of potatoes. It may be possible to consume them all, but it will be better to eat a certain proportion, setting aside the rest to plant in unused ground; a greater future store will be obtained, at the cost of putting off consumption. There is no difference between the planted potatoes and the others, but the former are capital and the latter simply consumption goods. The conception of fixed capital must not be allowed to mislead; seeds which may be directly used as food must be counted as capital if planted, just as truly as the most expensive and highly specialised machine.

7. Consumption goods and circulating capital often proceed directly from the same source; if the total amount of the commodity is fixed, circulating capital can grow only at the expense of present consumption. Thus all wealth may be capital in the sense that if the stock of consumable wealth suddenly increases, some part is sure to overflow and form new capital, while if commodities are destroyed, some circulating capital will be called in to compensate for the loss of immediately consumable wealth. We have thus shown that certain consumption goods may be actually themselves used as capital, and that the use to

Instance of
relation of
Wealth to
Capital.

Circulating
Capital.

which they are put will define their position with respect to capital.

The relation of wealth to circulating capital is thus essentially a question of transference. In extreme cases, capital and consumption goods are perfectly interchangeable, and at any time goods may be transferred from one class to the other without loss, *e.g.* a spare room in a house may be turned into a small shop, and *vice versa*. Usually, however, the decision when taken is irreversible, at least in part. If potatoes are planted, they are soon unfit for immediate consumption, while if eaten, they are obviously of no further use as capital. A continuous series may conceivably be drawn up, in which the transference to capital and *vice versa* becomes increasingly difficult, and this not only on account of the difficulty of obtaining a commodity which is equally useful at a present as at a future time, and *vice versa*, but also because capital usually requires a preliminary preparation, which may require time (waiting). Further, if the partially prepared commodity is of less utility for immediate consumption than the original form, the peculiar utility of the prepared product will be its utility as capital simply.

As the original commodity is in itself of less immediate utility, as the preparation time becomes longer, and as the labour expended on the commodity is more and more undertaken with a distant aim in view, the prepared wealth is segregated into a special class, that of Fixed Capital. At one end of the chain, wealth and capital are identical terms; at the other end, the fixed capital may be useless to satisfy any but a single want; yet there is no definite line of separation between fixed and circulating capital, or between the latter and consumption goods.

8. The creation of fixed capital is thus a matter of transference and waiting, however complicated may be

the intermediate steps. The transference of wealth from present to future uses has been made easier by the use of money and, in modern times, of credit. Money is the link between complicated processes, and allows the difficult transference between raw materials and machinery to be made as certainly as that between grain food and seed corn. An individual must still choose between immediate and deferred uses, but under modern conditions the choice is hidden and indirect. In a money economy, a man is tempted by monetary reward to help production, thereby obtaining desirable things. If he chooses, he can consume immediately all the goods he can purchase with his wage, just as the farmer may eat all his seed corn and potatoes; he may prefer to put off consumption, if he is far-sighted enough to realise that he can buy future goods which will give him a greater total pleasure. He himself may not wish or may not be able to buy materials which, under his skilful handling, will be an aid to further production, but he can hand over the use of his money to an agriculturist or business man, who can increase production just as the small gardener increases his stock of potatoes by intelligence and waiting.

9. Money gives command over an almost infinite variety of goods; for our purpose, we note that money may either attract consumption goods or it may be an agent for collecting under one control those goods necessary for production. The entrepreneur, *i.e.* the business man who takes the necessary risks, rarely uses his own capital alone; his fund of fixed capital and flow of circulating capital are concentrated because he can borrow money from innumerable persons, and with it can command the services he requires. The essential feature of the operation must never be overlooked;

**Fixed
Capital.**

**Relation to
Money.**

by offers of future gain, he persuades those persons who have money to forego their present command over goods, and to defer immediate consumption. There is a partnership of waiting; the investor puts off the enjoyment of his income, and the entrepreneur incurs present labour that he may obtain a future reward.

This fact explains why capital is usually regarded as money, for modern industry is so complex that without the help of money it would be impossible to collect the essentials of production so quickly and easily. The process is made much more efficient by the use of credit, which will be considered later. It is sufficient here to say that the money of small investors is mainly controlled by banks which, by the use of cheques and book credits are able to lend money to entrepreneurs of proved ability; thus an employer can call in the capital he needs and use it so well that after a period of "waiting" he can give back the capital he borrowed, with a surplus, and yet retain a portion for himself.

**Real
Importance
of Capital.** 10. The vital nature of capital will now be seen; the boundary between capital and consumption goods is so shadowy that the distinction may seem unreal, but it must be maintained; the proportion of present wealth transferred to capital determines in part the amount of future production; further, an increase in capital has a cumulative effect, for production takes place more than in proportion to the applied capital, at least in respect to goods subject to increasing return; if the proportion to total wealth under such conditions of increasing return is high and constant, wealth will increase roughly according to a geometrical progression.

11. The growth of capital depends largely, but not wholly, on the amount of saving, i.e. it is governed by

the difference between production and consumption.

**Capital
Dependent
on Saving.** Lassalle was wrong when he regarded capital as a result of "conjuncture" or favourable surroundings. Thus he considered that if a man owned land in a developing district, its value would rise, and capital be created. This is "lucrative" capital, and is quite different from fixed capital employed in industry, which is, partly at least, the result of real abstinence on the part of investors. The growth of capital, however, is not necessarily a painful process, but while abstinence is not a universal condition, "waiting" is an invariable accompaniment.

The amount of saving represents the upper limit of the growth of capital, so long as credit conditions do not alter but saving, as such, is not necessarily followed by increased production. If an excess yield of corn is simply stored away for future consumption, there is no "increase," or, in modern terms, no production. Saving merely provides the possibility of the formation of capital, which implies not only waiting, but a definite productive aim. If every man in a purely agricultural country saved his surplus income, granaries would be full and flocks and herds be plentiful, but there would be no geometrical increase of wealth; an attempt would be made, as to-day in Asia, to exchange the surplus for durable objects of value, *e.g.* gold and precious stones; some agricultural labour would be transferred to mining. Even in a gold economy, men are apt to hoard their gold, and by deliberately giving up their command over commodities thus lose an opportunity of aiding production. To-day, however, the smallest sums may be put into banks, which sweep savings into industry; men, by their thrift, may unknowingly develop manufactures.

We must conclude that in England, under present

conditions, an increase in saving swells the stock of capital, after making all allowance for waste and for hoarding. Some believe that if all men saved all their surplus over absolute necessities, production would be checked, for consumption supplies a stimulus without which goods would not be made; however, it is no less reasonable to suppose a country which would live sparingly and yet use its surplus wealth in production. At the present time, manufacturers are so eager and knowledge develops so rapidly that there is little fear that habits of saving will check consumption so far that the effect will overbear that of the increase of capital. (See also the discussion of the tendency of interest to a minimum in Chap. XIII. on "Interest" p. 326).

12. Saving is governed by four main factors. (1) by ability to save; a poor man can save little, (2) by the relative importance which men attach to present and to future pleasures, (3) by the expectation that saved wealth will appreciate or depreciate in value, and (4) by the certainty or uncertainty that the saved goods (or their equivalent) will be actually enjoyed.

13. Saving is almost absent among people who discount future pleasures at a high rate, i.e. among those who prefer a small present pleasure to a larger one in the future; savages have usually so little imagination or self-control that they will make no sacrifice to ensure even the keenest future pleasure, and the same characteristic is noticeable in most children. Men of education present great differences in this respect; the terms "extravagant" and "mean" imply the variability of men's habits in discounting the future. Among men of equal means, the one who lives for the future is the more likely to save. In extreme cases,

a man may make money for the sake of children, perhaps yet unborn, or may "found a family" at great expense, that his name may be remembered.

14. Rapid spending does not in itself promote production,

**Effect of
Spending on
Production.**

though it is commonly believed that ex-

travagance "makes work." Such spending

simply determines the particular direction

which production shall take; if much money

is spent on cinemas, then the cinema industry is stimulated.

If the money had been invested, however, it is probable

that it would have had a more favourable effect on pro-

duction, for it would have represented an increase of

capital. Rapid spending does nothing to make general

production possible; it is a demand for present wealth;

where present pleasures are insistent, no saving occurs.

15. A thrifty man who is earning a good income will

**Depreciation
and
Appreciation.**

save much even when he knows that his

savings will depreciate, for he estimates that

when his income falls, the future marginal

utility of money will be greater than it is at

present; a poor man, especially if open-handed, will save

little even if he knows that the value of his savings will

increase. On the whole, however, the expectation of

depreciation will diminish saving, and *vice versa*. Stores

of food are likely to spoil, and this applies also to clothing

while a store of ornaments is of no direct use in satisfying

hunger or thirst, ever present in a primitive community.

Few goods are altogether unchanged by time; even gold

alters its value (though it is itself unchanged), and buys

more or less wealth at one time than at another. A few

goods improve by keeping, *e.g.* wine, but these are of little

use as capital. The introduction of a satisfactory monetary

system, however, has led to another kind of appreciation

which is of increasing importance. Interest is so familiar

that we may take its existence for granted, postponing a full discussion. Capital is so important an agent of production that an entrepreneur will pay for its use. In spite of the large amount of capital available to-day, it still commands a high price.

16. In normal times the rate of interest in England is fairly steady, though the present rate (1921)¹ **Interest.** is abnormally high for special reasons; a steady rate is usually accompanied by a fairly steady volume of saving. If the rate of interest rises, the result, on the whole, is an increase of saving, though in individual cases the opposite effect may occur; if a man is satisfied with a certain definite income on which to retire, it may be that when the rate of interest is raised he will stop saving when he has obtained the lessened principal sufficient to produce the required income at the higher rate. This case often occurs, but is far less common than that where the higher interest stimulates increased saving, for the sake of the higher income. In a large population, the stimulating effect of higher interest is almost sure on the whole to overcome the repressive effect, much saving, however, is independent of the rate of interest, especially in the case of rich men who save automatically because ordinary wants are satiated, and of very poor men, who struggle painfully to build up an emergency fund.

17. Not the least cause of the modern growth of capital is the greater security of life. **Security.** A mediaeval Englishman might slowly build up a hoard of gold, only to be robbed by a strong neighbour. A lawless life encourages present pleasures, for there is no certainty that savings will be enjoyed. To-day, a man may entrust his money to the hazards of industry with a greater sense of security than that with which his ancestors

¹ It is now much nearer the pre-war normal rate (1/23).

hid gold and silver. Risk to-day is of a different type; an investor may deliberately seek a risky speculation in the knowledge that if fortunate he will reap a greater reward than if he relies on safe investment. Most men, however, prefer a more certain, if smaller, rate of interest. A new motive power of saving continues to develop; repayment is so certain after any interval of time that a man already prosperous will continue to accumulate wealth and set aside a portion for the future enjoyment of dependent wife and children. Gradually as the standard of living is raised, this is becoming a more important factor in accumulation. That the well-being of dependents is a powerful motive force is shown by the volume of insurance business, especially where payment is made after death.

The security of modern life works in another direction in the case of Poor Relief. Many labourers feel so secure against want that they make no provision against old age, and so the countless small sums which would be diverted into industry are wasted in unproductive consumption. The grant of Old Age Pensions has often worked in the same way, though probably in as many cases it has given a new hope to despairing workers, and encouraged them to save a little money to supplement their pension. Again, money which would otherwise be saved to provide an insignificant income may be used to increase productive efficiency, and so be used more wisely than by adding to national capital. In any case, the moral advantages of the prevention of destitution by pensions or by other means far outweigh the possible check to capital accumulation. On the whole, it may be said that increased security will mean greater saving.

18. The presence of the four conditions of effective saving obviously make for a greater accumulation of capital, assuming as we do that the greater part of in-

vested money finds its way at last into some productive process; however, it must be noted that the question of appreciation of saved wealth is bound up with the possibility of easy and convenient saving. To-day, money and credit make this possible, but they are not perfect institutions, and their very efficiency leads to grave abuses. Much investment is almost pure waste, especially in the case of direct speculation in doubtful companies, particularly in times of business excitement when prices are rising quickly.

If savings are used to buy mortgages on property so that the former owner may spend extravagantly, or diverted into the pockets of company promoters, or invested in unsound concerns, so far there will be no direct increase of capital, though it may happen that quick spending will transfer money to men who will themselves invest it wisely. A spendthrift may buy goods far above their true value, and a shrewd, unscrupulous buyer may dispose of the excess price wisely and well; it will generally happen that if an honest investment pays a good return, it is able and willing to absorb more capital. A large proportion of the prices paid by rich men often consists of surplus over the true prices, and much of this surplus finally enters industry. Under present conditions a very large proportion of the nation's savings is absorbed in production.

19. The source of capital is the whole of the national dividend, but different individuals contribute in largely varying proportions, on account of the variations in individual wealth. To a rich man, the marginal utility of money being low, future satisfactions may appear which are much greater than those granted by present marginal expenses. A poorer man will look forward to more intense wants than the

**Saved Money
usually used
in Production.**

**Source of
Capital.**

other, but in his own mind he realises that his present marginal utility of money is high, higher even than the prospective satisfaction of future needs, and he is less likely to save. It is true that the bulk of new capital is accumulated by prosperous men, *i.e.* that capital is derived from profits rather than from wages. The growth of savings banks, however, stimulated small investments, though to-day these banks are met by the competition of Government loans not directly productive. Similar institutions, fed by numerous small deposits, are "Building Societies," as well as the Schultze-Delitsch and Raiffeisen banks of Germany, which grant loans to entrepreneurs.

20. It will thus be seen that capital resembles labour rather than land in its capacity for growth.

Capacity for Growth. Land by hypothesis is limited in supply; wealth, however, may be used on the one hand to increase the quantity or quality of labour, and on the other to swell the national capital. At the present day, labour appears to grow less rapidly than capital; indeed, as the population approaches the stationary state, the growth of capital continues unchecked. On the whole, in considering long periods, it is perhaps true that labour and capital increase hand in hand, but in England since the Industrial Revolution, and particularly during the last half century before the war, capital growth gained rapidly on population increase. As we shall see, man derives his food according to diminishing return, but most of his manufactured products according to increasing return.

• An increase of wealth tends to increase capital growth not only because industrial capital tends to grow in a geometrical progression, but also because certain production can be carried out only when attempted on a large scale. Some engineering work could not be done at all without the aid of very expensive fixed capital, which is

made very slowly ; when it is ready, the need for it may have passed, or it may not fulfil expectations, thus causing serious loss. Such experimental production can be carried out only by men who control much capital, and who are so rich or, alternatively, so numerous and well-organised, that they can afford the risk of loss in the hope of great gains.

A Panama Canal can be made only by mobilising the resources of a continent. One of the main features of modern capitalism is the fact that for the first time huge undertakings can be carried out under the control either of very rich men or else of rich states drawing on the resources of the inhabitants. A Channel tunnel or a Severn barrage might bring an enormous access of wealth to this country, but an immense preliminary expense would be necessary. If a country is rich enough to employ huge quantities of fixed capital it will probably find that wealth accumulation proceeds even faster than it otherwise would. When world capital is properly mobilised, there may be ambitious projects which, in spite of their expense, will result in an unprecedented bound in the rate of increase of wealth.

21. We conclude with a historical sketch of the method by which the expensive fixed capital of modern times has developed. In addition to the implements already mentioned there was in early societies another type of true capital, flocks and herds ; their importance may be judged from Bible narratives. Probably animals were in the first case kept as pets ; it is likely that most of the wild beasts with which man has come into contact have, at one time or another, been tamed, and that those animals which are most useful to man have undergone a process of natural selection ; many have greatly changed in the process,

**Historical
Sketch.**

e.g. the cow and domestic fowl. Some tamable animals are naturally useful to man, and others have so developed as to become more useful; however, it is probable that the deliberate rearing of animals for the sole purpose of providing food or transport was a process of slow growth, and even yet, many rich men own useful animals for other than utilitarian reasons.

Thus the growth of capital in early days was not due to "abstinence" or even to waiting in the modern economic sense, but was a kind of by-product of the pleasures of ownership. Even the construction of implements may have been a means of self-expression or a not unpleasant method of employing leisure time rather than a deliberately painful effort, borne because of greater pleasures to follow. But even then the notion of "property" had developed; just as much of the confusion of thought which the notion of capitalism calls out to-day is due to the concentration of capital into a few hands, so the pride of possession was probably the main motive of increase in earlier times, for a man was rich not in proportion to the number of things he could consume, but to his capacity for display. In later times, a rich owner could loan out his stock, and it is to this use of stock as lucrative capital to the owner and true capital to the borrower that many feudal customs are probably due.

"Once men bred capital more than they made it. . . . (Cattle) are a kind of capital at once co-operative and remunerative; they can be used either to aid labour or to reward it; they are both helps to industry and means of pleasure. Their vital force is the best of early machines, and their milk and their flesh are the greatest of primitive luxuries. There is scarcely anything which primitive labourers more desire, and scarcely anything which helps them so much. . . . Capital unquestionably, on account of

this double desirability, are among the earliest forms of money, probably the very earliest in which 'large transactions,' as we should now speak, were settled. It was the first, or among the first, of 'wholesale' moneys. . . . Cattle have been a main agent in creating the developed state of industry in which English Political Economy was thought out. Cattle rendered possible primitive agriculture, which first kept men close together, and so made the division of labour possible; were the beginning of 'wages-paying capital' which that 'division' first requires and then extends; were among the first things hired, and the first money." (Bagehot).

As men gave up their nomadic life and settled in villages, tillage became more important relatively to hunting and fishing, and food supply began to be regularly obtained from the soil. In early times, there was no lack of land, which was so abundant that very poor methods of cultivation sufficed to satisfy the needs of the people. Much labour, however, was expended on the cultivated portions, and thus the soil was permanently improved. When the land belonged to the village as a whole, a communal interest was taken in it; improvements on agricultural settlements, however trivial according to modern standards, represented a new type of capital. The early history of developing countries is largely bound up with agricultural progress; from the standpoint of the rich Roman, his chief capital was the supply of slaves necessary for tillage but, even then, the artificial increase of fertility which took place was a true growth of capital.

In the next stage, commerce began to develop, as the differing products of neighbouring countries stimulated exchange, and as weaving and other industries so far developed that certain trades began to grow in definite centres. Tools were still of a simple type but, such as

they were, formed the beginnings of the expensive fixed capital of modern times; capital, however, in the later Middle Ages was mainly represented by the developing industry of shipping. In the sixteenth century, buildings used for manufacture appeared in England, and these were true capital.

Both agricultural and commercial capital have developed continuously up to the present; relatively speaking, however, they have been overshadowed by the stupendous growth of industrial capital which has been a feature of economic life since the eighteenth century. Even in agriculture, however, capital is playing an increasingly important part relatively to land and labour, as expensive buildings and implements testify, as well as the extended use of circulating capital such as manure and other commodities which are applied with a view to the next harvest; in manufacture, modern production and trade necessitate the use, not only of complex machines which partly aid and partly displace labour, but also of the immense stock of capital owned by railway and shipping companies. The national wealth of England tends more and more to consist of fixed capital, and we may look forward to a time when capital will become the most important non-directive agent of production, as mankind is continuously relieved of monotonous labour.

The present-day prominence of fixed capital has meant a divorce of labour from the ultimate product. In early times, man found or made those same goods he meant to use, but to-day, most workers are involved in only a single stage of production. Fixed capital usually necessitates "roundabout" production; each single article is apt to be made more slowly than if directly shaped by human labour—at least in the case of goods easily manufactured by hand,—but this lengthening of the process is far more than

compensated by the saving in cost and the actual saving in time when commodities are made in quantity. To make a pair of boots by a new machine, it is necessary to wait till the machine is made, but the time lost is soon recovered when a continuous supply of boots is required. In time, economies may be effected which will make machine production more direct, but the new application of machinery is nearly always accompanied by a specialisation of the work of individual workers and by a lengthening of the production process both by the necessity of producing machinery and by the pulling out of manufacture into successive stages.

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CHAPTER VII.

AGENTS OF PRODUCTION.—ORGANISATION.

1. The processes of production must be completed and unified by the appropriate organisation.

**Organisation
a unifying
Process.**

Land of incomparable richness may grow raw materials near to the best equipped factories and near to a good market, amid a supply of high-grade labour, but not one article will be produced until the factors have been brought together by a directing intelligence. The combination of the three agents already considered may form a whole far more effective than the sum of the three agents taken singly, for each agent aids the others, so that each is more effective than if it worked alone. Labour by itself can produce not a morsel of vegetable food, and uncultivated land satisfies human needs scantily and accidentally, but the combination of the two could feed the human race.

Capital not put to its proper use may be worth less than the material from which it was derived ; in combination with labour it transforms man's productive powers. Organisation stimulates production in so far as it brings together the other three agents, but it has also an increasingly important function in that it attempts to combine them in such a way as to lead to the best possible results. A perfect organisation in relation to a given supply of the other three agents is the one which, with the materials provided,

will so arrange their working as to give the greatest and most economical production. It does not follow that such a maximum production will be the best for the community, for the goods produced may be harmful, but it is advisable to search for the conditions of effective organisation, and to leave other questions for later treatment.

2. Organisation is consciously directive only in part, for much of its effectiveness is the result of the liberation of forces by masses of men who by crowding into certain places have altered the whole conditions of production. In a thickly populated state, a great reservoir of labour exists, and capital grows quickly; each individual will tend to enter that occupation and in that capacity which will remunerate him best, and which is likely to provide the conditions under which he can do the most effective work; the owners of capital and land are likely to follow the same course. Thus there is a tendency for each element of land, labour, and capital to be shaken into that position in which it can work most efficiently. Obstacles do occur; that effect of habit and custom in preventing the working out of economic laws which is known as economic friction is always present, but any change that does occur is more likely than not to be followed by increased efficiency.

A growing economic society, like all organisms, is badly adjusted at many points; economic laws work in such a way that where there is a bad adjustment of means to ends, irritation will occur tending to force each factor into its most efficient use. Not only is there this direct incentive to favourable change, but the law of survival of the fittest is very applicable to economic conditions. Just as a developing species moulds itself into conformity with new conditions, so a people will tend to arrange its life that it tends to create those institutions and those particular groupings

which make for a maximum production. Organisation in its more usual and narrower economic sense is a thing outside the control of the individual labourer or even of a powerful employer, while the State itself is powerless to mould organisation completely to its liking. The structure has been built up out of individual directive acts, but once made it appears as an almost uncontrollable machine, conditioning production.

3. The boundary line between individual directive action and labour cannot be defined exactly. In
The Primitive Handworker. primitive handwork, the making of an article is an indivisible process; a man uses raw material which happens to be present, works it with tools he possesses, while the labour performed contains both mechanical and directive elements. There is no separation of these elements, for the man himself keeps an end in view, and uses land, labour, or capital indiscriminately according as they will serve his immediate purpose. The director of operations is the man who actually carries them out, and the intelligence used in doing the work is of the same kind as, and is indistinguishable from that used in collecting and co-ordinating the materials and efforts required.

4. The present production system is of recent growth, and began to develop during the Industrial
The Modern Entrepreneur. Revolution. Side by side with the progress of that individual directive ability which is a lineal descendant of the ability of the early handworkers, has been the growth of an economic structure which has greatly aided manufacture but has at the same time placed limits on free individual development. ~~The task of the entrepreneur is twofold—~~he must organise and direct his own resources, and also take care that his actions are in harmony with the economic structure as a whole. The

most skilful man can no longer control even a purely production process on any but the smallest scale; he must show his ability in turning the working of the system to his own advantage.

Instead of the limited environment from which he has to choose the various materials for making a small article, the modern manufacturer knows that there are enormous stocks of raw materials grown or ready to be grown by nature's processes, masses of human labour he can put to good use, and much machinery and other fixed capital. So far as he selects from this mass the combination he can obtain and control, of the proper kinds and in the right proportions, he thereby supplies organisation and his work can be considered a form of labour. So far, however, as his choice is widened and his efforts at combination are made easier by the nature of the economic structure, there appears a type of organisation which is independent of him though it is the outcome of the economic action of large numbers of men like himself. Organisation as an agent of production is usually taken to mean this secondary effect rather than those individual organising acts which may more conveniently be included under "labour" in its extended sense.

5. This secondary action is well exemplified in the case of railways. Rolling stock cannot be made spasmodically, but must be produced on a large scale, on account of the expensive plant employed; manufacture has thus had to be concentrated in a few places. By this very fact, economies were made possible and inventions encouraged; the existence of railway centres thus reacted on production, and gave these centres such an advantage that manufacture was more effective than anywhere else. The fact that engines were made in the first place at Swindon or Crewe led to the

**Industrial
Systems.**

continued pre-eminence of these places; efficient and economical production in a self-contained centre led to the network of processes which was the means of yet more efficient work. There was probably no deliberate attempt to create a system, but any continued action on the part of a collection of men must inevitably create a structure which conditions further effort.

The relation of biological to economic method is especially noticeable in this connection, for the laws which govern the rise and fall of genera of plants and animals are similar to those which hold in respect to different types of economic organisation. Thus, on the whole, those human groupings which can most effectively use their environment are most likely to persist. The marvellous adaptations of animals to their surroundings made the same kind of impression on eighteenth-century thinkers as did the working of the economic system of that day; an economic optimism grew up, finding its fullest expression in nineteenth-century writers like Bastiat and Carey, whose ideas contain much truth.

Whenever an assemblage of forces is acting, the underlying laws work in such a way that a system is created which will overbear the action of individual forces. Gravity is an example; if a pendulum is displaced, gravity attempts to restore the former equilibrium. One of the deepest and most widespread of scientific principles is that when a disturbance of stable equilibrium occurs, forces are set in motion which oppose such disturbance, and tend to restore equilibrium; the thoughtful reader will find many examples of this principle in the preceding and succeeding pages. Scientists will recognise various forms of the law; Lenz's Law in electrodynamics will suffice.

This principle is the true basis of Bastiat's doctrine of

economic harmony. Under the guiding principles of self-interest and free competition, an economic system has developed; any action which disturbs the prevailing equilibrium of demand and supply (*e.g.* the unexpected destruction of large stocks of a certain commodity) will (in this case through increased prices) stimulate action which will tend through increased production to remove the shortage. The army system during the War was an attempt to create artificially a substitute for civilian organisation; however, the arbitrary army rules so traversed the natural groupings of action and motive that the rules were “worked,” and either evaded or given a practical application different from apparent intention, but in greater harmony with existing conditions.

6. Organisation, however, possesses no sanctity, and a clear distinction must be drawn between the process of adaptation with a view to make a more favourable use of environment and that of self-improvement with a view to benefiting that environment. In Economics, the environment of an individual is composed largely of other persons, and it does not follow (though it will often happen) that the man who manages his own business most successfully will benefit his fellows the most. This is the root objection to the theory of *laissez-faire* in its strictest form—the theory that the natural structure of society is so perfect that Government makes a mistake whenever it interferes in economic matters. Economics differs completely from physical science and partly from biology, in that the environment itself is subject to slow modification by collective action. Economic habits are visibly altering, and an organisation which will so traverse economic laws that a classical economist would have considered it impossible of realisation seems to be a not

Economic
Environment
consists of
other Persons.

improbable future development. Above all, it must be understood that organisation is in a process of continual growth, and depends, not only on the immediately preceding system from which it developed, but also on changes in habit and custom, on the growth of knowledge, and on the development of ideals.

7. Perhaps the most characteristic feature of the organisation of modern industry is the growing specialisation of function of the workers, *i.e.* the growth of Division of Labour. The opening chapter of the *Wealth of Nations* gives the classic account of the subject.

“The greatest improvements in the productive power of labour, and the greater part of the skill, dexterity, and judgment, with which it is anywhere directed, or applied, seem to have been the effects of the division of labour. . . . To take an example, therefore, from a very trifling manufacture, but one in which the division of labour has been very often taken notice of, the trade of a pinmaker: a workman not educated to this business (which the division of labour has rendered a distinct trade), nor acquainted with the use of the machinery employed in it (to the invention of which the same division of labour has probably given occasion), could scarce, perhaps, with his utmost industry, make one pin in a day, and certainly could not make twenty. But in the way in which this business is now carried on, not only the whole work is a peculiar trade, but it is divided into a number of branches, of which the greater part are likewise peculiar trades.

One man draws out the wire; another straightens it; a third cuts it; a fourth points it; a fifth grinds it at the top for receiving the head; to make the head requires two or three distinct operations; to put it on is a peculiar business; to whiten the pins is another; it is even a trade

by itself to put them into the paper ; and the important business of making a pin is, in this manner, divided into about eighteen distinct operations, which, in some manufactories, are all performed by distinct hands, though in others the same man will sometimes perform two or three of them.

I have seen a small manufactory of this kind, where ten men only were employed, and where some of them consequently performed two or three distinct operations. But, though they were very poor, and therefore but indifferently accommodated with the necessary machinery, they could, when they exerted themselves, make among them about twelve pounds of pins in a day. There are in a pound upwards of four thousand pins of a middling size. Those ten persons, therefore, could make among them upwards of forty-eight thousand pins in a day. Each person . . . might be considered as making four thousand eight hundred pins in a day. But if they had all wrought separately and independently, and without any of them having been educated to this peculiar business, they certainly could not each of them have made twenty, perhaps not one pin in a day ; that is, certainly, not the two-hundred-and-fortieth, perhaps not the four-thousand-eight-hundredth part of what they are at present capable of performing, in consequence of a proper division and combination of their different operations."

The student is referred to the original for the remainder of the exposition ; the striking passage quoted may not be a perfect picture of the pin industry to-day, but the same principles are everywhere met with in modern manufacture. We have already noted the broad lines of division between hand and brain worker, between labourer and entrepreneur, but specialisation is carried on far more minutely. It has developed as a result of the experience

that a piece of work is done better and quicker if the worker has had previous experience of that particular kind, and this holds alike in mental and manual labour. Even the works of pure genius, the masterpieces of painters and musicians, would have been impossible had not technique been developed by long and patient practice; in the case of the average man, trained and experienced inferior skill can do better work than superior but inexperienced talent; an experienced clerk of less than normal intelligence may do his work better than a newcomer of real natural capacity.

8. In the case of handwork, the processes involved are physiological; in mental work, they are more
Importance of Repetition. hidden, but are probably of the same fundamental character. When a game is first learnt, attention must be concentrated on every detail, but when a particular stroke has been mastered its use becomes instinctive, and nervous energy is set free for the learning of new strokes; a batsman must learn first to hit the ball, but having done this, he may learn to control its destination. To some extent, thinking capacity is a substitute for experience, but is slower and less certain in its immediate action; while the highest work demands careful thought processes, much other productive work is a mere mechanical repetition of simple movements; for this, the instinctive co-ordination of mind and muscle, developed only by practice, is essential.

Division of labour is thus helpful to the worker in that it allows of constant repetition of the same task by the same worker, enormously increasing his efficiency, up to a certain point. This is made possible by the splitting up of a complete production process into a series of simple and understandable movements, each single one presenting little difficulty, but in combination forming a whole which

in its entirety would task the skill of the best worker. Production is less direct, but mass production, especially in the case of easily-graded goods all made in the same way, is more quickly achieved. Those branches of production which make goods not easily gradable, *e.g.* high-class tailoring, are less susceptible to division of labour, for so much thought and individual skill is applied at each stage that there is little possibility of division of the process into a series of simple automatic actions.

9. Not only is the work simplified by this division, and not only is the efficiency of each worker improved by repetition, but there is a better chance that each worker will be put to that process for which he is best fitted. The stages in modern manufacture are so numerous and diversified that varied abilities may be utilised, each man will naturally gravitate to that process which requires the peculiar abilities he possesses, and these will be sharpened by repetition. Men with skilful hands, quick wits, good judgment or intellectual ability may each find scope, and the value of repetition is greater in proportion to the original capacity of the particular worker.

If a thousand men all make the same complete article, they are not likely to master the whole of the processes, but if each specialises on a particular section, he will be able to explore its possibilities, especially if he be attracted to that particular process; as the efficiency in each single section is likely to be very high, so will be that of the manufacture as a whole. Much of the inefficiency of an army is due to the fact that no real attempt is made to place men in the positions in which they would naturally do the best work, while the soldier's tasks are so many and varied that there is little opportunity of learning a single process thoroughly; even here, however, cases often occur

Other
advantages of
Specialisation.

where men learn new methods successfully through being suited to their position, while liking their work and obtaining sufficient opportunities for continued practice.

Specialisation allows of economy in time, as well as in tools and materials. The mediaeval craftsman spent much of his time in the fields, for he followed agriculture, and in any case his market was so limited that he was not assured of continuous work. Much time was wasted in passing from one occupation to another, and there might be alternations between slackness and feverish hard work. In the modern factory, most of the working day is passed in a definite place, and little time is thus wasted in unnecessary movement; there is also an economy of labour in the sense that an attempt is made so to fill up the time of each labourer that he is employed to his full capacity. By this means, unnecessary labourers have been transferred from occupations in which they were only partly employed into new ones in which they could work more effectively. The same holds good with respect to tools and materials; when many people weave cloth by hand, there is much wasted material, while each worker requires separate tools or machines, but when fewer labourers are enabled to do the same amount of work, there is less wastage, and fewer tools and machines are required.

10. There are two great objections to the introduction of division of labour into industry, *i.e.* monotony of work and the dependence of the individual worker on his particular occupation. When a man learns a trade, his interest is usually greatest when he begins to master it; when the work becomes instinctive, and he loses the capacity for improvement, the sense of monotony deepens as his execution is perfected; he may feel a pride in his excellence, but, if he works regularly at the same task for long hours he is repelled by the lack of

Objections to
Specialisation.

freshness. This is a serious evil, for production should be a means to an end, that of greater human happiness; no community can be healthy if the pleasures of the fortunate are obtained at the expense of the labourers; the effect of drab working conditions on the life of the worker and, more important still, on his conscious or instinctive attitude towards his growing children, may utterly preclude the hope of a better and brighter future for those classes which have in the past been caught in the grip of the more malign forces liberated by the growth of specialisation.

The very perfection of the adaptation of individual skill to the demands of specialised industry increases the dependence of the labourer on the system; if the man loses his skill, or if new methods appear which make his work valueless, he may find it difficult to obtain employment; in so far as he has given his whole time and energy to his particular process, he will find it all the harder to transfer his general abilities to other branches. In mediaeval times, the diffusion of interests prevented the absolute dependence on industrial fluctuations which is so common when a developing industry requires much highly specialised labour. "Wage slavery" implies detestable conditions of work combined with the impossibility of obtaining better conditions elsewhere.

11. It is possible to retain the advantages of division of labour while avoiding the serious drawbacks, but the problem has not yet been solved in practice. The remedy lies in a diffusion of education in its widest sense, leading men to make the best use of leisure. If the claims of super-production and of welfare conflict, the former, in an ideal community, must give way; it is certain, however, that a wiser use of leisure would so react on general intelligence that the quality of production would in the long run be

Development
of General
Intelligence.

improved, and the quantity be kept up to its former level under pleasanter and less strenuous conditions, during shorter hours of work. There are signs that leisure is being used more wisely, both in respect to physical and mental health and also to efficiency. A developed intelligence may go far to remove the drudgery of daily work, for it may bring out unsuspected implications in it, and so keep alive the interest and the hope of further progress which are sooner or later killed by continuous drudgery. Again, the sharpening of general intelligence lessens the dependence on a particular process, and makes it more easily possible to move to another occupation when necessary.

The development of general intelligence directly stimulates improvement of productive methods, and also tends to remove the causes of monotony. When a process is so split up into its parts that each section is simple enough for its efficient working to become monotonous, it is time for a machine to take over the work. Machinery can do wearisome work automatically, and though its immediate effect may be against the interests of hand workers, as in the later eighteenth century, labourers will benefit in the long run. Capitalistic methods may be, and are, misused, but machinery may become the most powerful means of lifting educated labourers into the pleasanter sphere towards which they should be impelled by the finer and more highly developed feelings of the community.

General intelligence is being developed by an extended system of education, prominent features being the abolition of half-time and the raising of the school leaving age. Again, the necessity for a long apprenticeship has passed, and the time thus saved may be given to general education.

12. Machinery usually leads to increased production, and this in its turn to possibilities of further division, again leading to new machinery. Thus the use of machines

is pushed further back, and threatens those processes which have been peculiarly the domain of Machinery. high-class labour. This is the result of the growth of standardisation. Hand-made articles differ from each other, however slightly, but machine-made goods of the same pattern are all alike; such goods can thus be easily "graded" in different qualities. When machinery is applied to a product, the price usually falls, and a demand is often created for the new standardised article. Thus suits can be turned out by mass production, easily graded by colour and quality, and the process is so cheap that a demand for such suits may be created where none existed before. This process of making goods which do not exactly meet all demands but which are very cheap is of increasing importance; the case of Ford cars, of Ingersoll watches, and of the suggested standard ships are obvious examples.

In the case of parts of machinery, hand work is incapable of making the standardised parts required; articles made by the same machine, however, are so exactly alike that complex machinery may be made up of interchangeable parts, so that if any one section is lost or broken it may be perfectly repaired; a separately made machine might be useless unless a particular screw could be remade. Interchangeable parts are of special importance in agricultural implements used perhaps hundreds of miles from the nearest repair shop, but there are great possibilities of an extended use of the principle in common life.

The wise extension of the use of machinery has a further value in that machine tending requires less specialised skill than hand work, though it often demands greater general intelligence. Thus the dependence of a worker on a particular process is lessened, for he can more easily move from trade to trade. The conversion of

factories into munition works offered no insuperable difficulties, for much of the skill obtained in manufacture could be directly transferred to shell-making.

Machinery may thus greatly increase production, while able to make working conditions less dreary and freer from strain; it may economise labour and thus set energy free for other pursuits; machine work is so far uniform in its nature that it is now much easier to follow a new calling than in former times.

13. The principle of Localisation of Industries is firmly bound up with that of division of labour, and is really its spatial equivalent. Districts, like individuals, tend to specialise in certain directions and, as already shown, the division of function is undertaken with a view to connect the different sections more intimately; specialisation is not a sign of aloofness of interests, but the very opposite. The arguments for and against division may be transferred almost unchanged to the case of localisation. A big industry is split into simpler components, which are separately more easily managed; cotton may be landed at Liverpool, spun at Oldham, woven at Bolton, stored at Manchester, and again exported from Liverpool. Thus Oldham may obtain a pre-eminence in spinning in the same way that an individual who has found his natural employment and who has followed it diligently may master his work. There is also the same economy of time, of machinery, and of materials. Again, just as a large factory covers less space than a large number of small sheds, so the concentration of particular operations in a certain town allows of a similar economy of space.

Localisation also encourages the growth of trades in intimate contact with the main industry, and the concentration of these will lead to further economies; most trades

require partly manufactured goods as "raw materials" while their own produce may feed another industry. If an industry is in close contact with effectively organised trades dependent on it, buying and selling are more easily and economically carried on; again, mere growth of population creates a ready market for commodities.

There is the same one-sidedness as in the case of division of labour, and the same tendency to dependence on a particular industry, leading at times to commercial depressions and so to unemployment; the presence of subsidiary industries, and still more of possible occupations not so dependent on the main industry can do much to mitigate the severity of these depressions; again, the development of cheap transport and the diffusion of intelligence may increase the mobility of the worker and allow him to find work in a locality where employment is more normal.

14. Communication is a vital factor; the better the means of communication, the more quickly the distributing forces will act. In one way, each trade will tend to move to its natural home, but this tendency may be offset by that of the producer to move towards his best market. Thus while Lancashire has restricted its agriculture and specialised on cotton production, this manufacture tends to flood over into the West Riding; again, India, though formerly a great market for English textiles, has begun to make its own cloth. The linen industry has almost deserted England, but if much flax were grown here, it is probable that linen would again be woven near large industrial towns.

15. When an industry obtains a footing in a district, it is difficult to dislodge unless totally new conditions arise, and the start may be largely accidental; in many cases a particular district obtained

an advantage in earlier times and has retained it because the presence of hereditary skill and established traditions has supplemented the advantage of localisation, especially if the district has been favoured by the march of events.

Sheffield became a steel centre largely because of the presence of good grindstones in the vicinity; the existence of coal, water power, and iron ore has confirmed the initial advantage, and Sheffield is pre-eminent to-day though local grindstones are a trivial factor, and though much of its ore is imported from abroad. Industries are growing along the main railway routes, *e.g.* iron at Wellingborough, but as yet the great industrial centres hold their own. The immense economies due to division and localisation are realised when we observe the import of bulky iron ore from Sweden and Spain, and of cotton from India and America; it is cheaper to import corn from the ends of the earth than to grow it at home, for it is profitable to send manufactured goods back to Asia and even America. Thus the old manufacturing countries are still in large measure the workshops of the world.

§ 16. Economies due to division of labour and localisation of industries affect production as a whole, and have drawn the lines of capitalistic manufacture to which individual manufacturers must conform; in the main, they are external economies. Those improvements for which individual business men are personally responsible and which chiefly aid the particular "house" are internal economies.

In a long-established industry, an old firm gradually perfects its methods; it learns to combine capital and labour in the best way and also to distribute the various units of these agents to the best advantage. Well-managed firms will survive and prosper, for though com-

petitors share their external economies, the former will evolve internal economies which will give them the mastery. One firm will fail because it relies on labour rather than on fixed capital, and another because it has too little labour to work its plant fully and efficiently; one firm will buy its raw materials badly, and another mismanage its sales; there may be a lack of energy, or else effort may be misapplied through want of intelligence. A business man in command of capital may combine his units of capital in many ways but there is, theoretically at least, a method of combination which will "maximise" production for a given cost; as new internal economies appear, the ideal condition will be approached. In a stable state of industry, internal economies will automatically be selected by the principle of survival, *i.e.* the Law of Substitution of a superior for an inferior method, and will become common property in such a way that they will at last be hardly distinguishable from external economies.

17. In a quickly growing industry, the case is somewhat different, for methods are in a state of flux, and there is little likelihood of the immediate growth of widespread conventionalised processes. On the whole, large scale manufacture of easily gradable goods made by machinery offers the best chance of internal economies, the advantages obtained are similar to those which accompany the external economies obtained by division and localisation. A large business economises machinery, for this can be used to a greater extent than in a small factory where a machine is absolutely necessary, but which is not provided with enough work to give its maximum benefit. Again, in a small place there is much routine work which must be done by hand because a special machine could not be kept fully occupied; in a large factory, a machine can be kept

**Advantages
of a large
firm.**

**—Economy of
Capital.**

continuously working and will more than repay its initial cost through saving of labour.

Especially when expensive but very profitable machinery is likely soon to be out of date is there the stimulus to obtain the most intensive results from it, and this may often be done effectively by working the machine continuously (*e.g.* a blast furnace) and the labourers in double or treble shifts. A large factory also can afford to have the best machinery for the same reason, for it can use it fully, and in addition the firm can afford to sink much money in fixed capital and to wait till it more than repays its cost; this applies even more strongly to State undertakings, *e.g.* suggested afforestation; the Danish train ferry system, which no small company could have carried out is an example of the principle. The textile industry of the Industrial North is largely a record of progressive improvements in machinery, valuable looms earning high profits being often scrapped to make way for still better machines. A large business may thus speculate with safety, for the bulk of its production remains unaffected by sectional alterations.

18. In a large firm, economy of labour is as striking as that of fixed capital. A small firm must
 —Economy of Labour. make the best of its human material, and it will be unlikely that each man is put to work for which he is well fitted; in a large business, not only is it easier to find men for the most important positions, but men are tempted to come to a large firm rather than to a small one. If there are three men in a workshop, it will be miraculous if they can carry out the whole processes so well as in a factory, where there is a large field of choice for the responsible positions and for those requiring highly specialised skill, leaving the ordinary tasks to be done by the average labourer.

A small firm cannot afford to employ a highly specialised workman if his work will be intermittent, but a factory will probably be able to keep such a man continuously at work, and it is economical to employ him just as it is profitable to buy expensive machinery if there is enough for it to do. If production is small, the employer himself will do much detailed work, but a large entrepreneur will be able to give his whole time to the direction of the business, dealing only with the larger problems. Buyers of raw materials and salesmen of finished goods find in a large business an opportunity to employ their special gifts fully and continuously. As regards purely internal processes, a large business is more elastic in that it is easier to carry out rearrangements.

19. There is also some economy of material in a large firm, though this factor is of decreasing importance, for the growth of scientific methods has tended to eliminate waste even

—**Economy of Material.**

in the smallest businesses; however, there is always the possibility of such elimination in a quickly developing industry. The large firm possesses an advantage, not only because waste products are so large in quantity that they may be dealt with in bulk, but also because a large firm can afford to keep an investigator who can explore the possibilities of more economical management. Certain firms, especially chemical and dyeing, employ a body of university trained research chemists (metallurgists in metal production, etc.) who are beginning to do for England what the highly specialised German scientists did for their country before the war. The extraction of dyes and countless other valuable products from the despised coal tar, the utilisation of waste gases in blast furnaces, the manufacture of hydrochloric acid, formerly allowed to poison the atmosphere and the more eco-

nomical consumption of coal are striking examples of this tendency.

20. These advantages possessed by a large firm do not apply in all types of industry to the extent that they do in production which requires a large amount of varied and expensive fixed capital and of many varieties of highly specialised labour. Even in textile industries, the weaving of plain cloth may require only an amount of capital which a small manufacturer can easily control; Lancashire and the West Riding contain numerous small "mills" of this type. In these cases, there is no real difference in structure between a few large factories and many small ones; a large factory, if it specialises on weaving (or spinning, etc.) is merely a collection of similar looms, perhaps not even under the same "shed." A large cotton factory in process of growth would probably tend to synthesise the different sections, *e.g.* spinning, weaving, etc., and at the same time to obtain effective control over raw material and ultimate sales; even if there were no opportunity of introducing superior but very expensive machinery in any department, the co-ordination between one process and another might offer abundant opportunities for economy.

Even in these cases where production is homogeneous, and there is little chance of effective co-ordination, large scale economies are possible. Where many similar sheds comprise a factory, there is economy of power, for it is cheaper to provide power for one large concern than for a number of smaller ones with the same total number of looms but under various management; unless co-operative power methods are employed, *e.g.* the hire of electrical supply, each factory will require a separate power house with resultant waste. Future development promises an extended use of electricity, when it will be easier for many

firms to obtain power from one source. Another economy is that of buildings and of building space, and also that of repairs which are done more cheaply and conveniently when a repair shop can give its whole time to one firm.

21. Any large firm is likely to buy more cheaply, for it, can go beyond the small merchant and obtain raw materials directly from larger dealers while the fact of being able to give a large order makes it probable that the seller will cut the price as low as possible rather than lose the order. It can also sell more easily, for it can offer a varied assortment of goods; its very size causes the goods to be well known and makes advertising easier, this end being again reached by the fact that the different classes of articles in a varied stock will advertise each other, especially when the lines of goods belong to the same general class.

22. A small man, however, possesses advantages which in some circumstances may allow him to compete effectively against a large manufacturer or trader. A large scale employer is to some degree at the mercy of his under managers, and though he has a good opportunity of choosing men of organising ability, his choice may be faulty; it may be easy to employ a man who has most of the essentials of success but who through some moral or other failing cannot be trusted fully; in any case it is not likely that a paid manager will work so whole-heartedly as one whose success or failure depends on his own vigilance.

A large employer will rightly leave details of supervision to subordinates if he is sure they can be trusted, for questions of general policy require a fresh mind, but a small employer may conceivably gain from direct supervision more than he loses by distribution of his energies. Again, in a large firm there is much unproductive work which is

necessary, but not directly availing towards production, *e.g.* elaborate systems of book-keeping, which are merely incidental in small firms. The larger stock of the big firm, again, may be balanced by the study which the small man may give to individual requirements; hand work has not quite died out even in some trades where capitalism is supreme; many bootmakers so study individual needs that it is profitable for them to specialise on hand-made footwear. A less useful function of the small trader has been the giving of credit, but this advantage has lessened with the growth of the system of cash payments.

23. Business credit stands on a very different footing from retail credit, for the latter is usually of questionable value while the former, wisely used, is an invaluable aid to production. At present the control of credit by big firms is one of their chief advantages, but the future may give to smaller men an increasing command over capital, and on this possibility, the type of industrial structure in the future largely depends. The tendency in the last two centuries, as at present, has on the whole been towards the increase in size of individual businesses; this tendency is most noticeable in the case of goods made by machine on a large scale; it is to-day also prominent in retail trading; "multiple" shops are common in all large towns. If this tendency slackens or reverses it seems likely that the change will be due to the direct diversion of the savings of the community into the hands of small capitalists or even of men who work altogether with borrowed money; this may easily be done by an appropriate development of banking.

Again, small businesses may flourish if external economies become very important relatively to internal economies, for it is through the latter that large business flourishes. The diffusion of general intelligence, the distribution of

specialised information, *e.g.* by Government departments or trade newspapers, and any other means which will allow a small employer to keep in touch with trade conditions and world movements, while allowing him to concentrate energy on his business, all serve to reduce the handicap under which he labours.

On the whole, although the growth in the size of individual businesses shows no immediate signs of slackening, a future development of small firms, or perhaps of groups of co-operative or semi co-operative producers is not improbable, but the processes involved cannot be fully understood until Distribution is considered.

24. Large business is increasingly prominent where fixed capital is most expensive, particularly in transport (*e.g.* railways and steamships), in engineering, and in iron smelting. The question of overgrowth, leading to the choking of competition, and to the development of trusts and cartels must be postponed, but the presence of these huge monopolies may be noted. Even in retail trading there is a parallel process at work to be set against the growth of small industries in textile manufacture. The example of America may herald a growth of trusts in this country.

25. We now return to that typical figure of modern industry, the Entrepreneur (also known as the undertaker or enterpriser). On him falls the bulk of the deliberate organisation within a firm; it is he who gathers the different economic strands into a system which results in each consumer receiving the goods he desires. His essential function is best seen by considering his work in the domestic industries which flourished in the early eighteenth century before the great inventions. Hand loom weaving was still the rule, but weavers no longer worked exclusively for

definite customers ; they had begun to supply widely used goods and yet had little knowledge of large scale selling methods. Middlemen appeared who bought the finished products, spasmodically or regularly, and sold them to consumers. The middlemen were not necessarily the employers of the weavers, and these might keep full independence ; the workmen sold their goods for definite prices, with no opportunity of making exceptionally large gains, while the middlemen had the prospect either of abnormal gains or serious losses. Those middlemen flourished who best linked up weaver and consumer ; successful men made large profits by so organising the buying and sale of goods that the right products were made in the right quantities at the right time, and guided to the right consumer. The middleman felt the play of economic forces and by reacting to them instinctively guided production into proper channels. These middlemen were not confined to the textile industries.

The importance of the above facts lies in their bearing on present conditions ; they allow us to abstract one side of the work of a "captain of industry." The great entrepreneurs of to-day are not usually pure undertakers, as were the middlemen described above, but are also large employers of labour ; it must be carefully noted that an entrepreneur is not necessarily a direct employer, though he usually happens to be so at the present day. On one side, the work of a business head is comparable to that of a middleman, for he organises the collection of those commodities he wishes to obtain, and then sells them to his own customers ; he stands at a strategic point, and so far as he obtains large gains, he will probably have been successful in efficiently translating the desires of customers into satisfactions. To a far greater degree than in the eighteenth century the entrepreneur is the risk taker, for

much production is so speculative that there is no guarantee that some commodities will be sold at all; in former times the middleman dealt mainly with necessities such as food or clothing, but to-day, large fortunes are gained and lost by the speculative manufacture of new luxuries.

26. Just as the entrepreneur may not be an employer, so may the reverse be true, i.e. the master may take no business risks. In the eighteenth century domestic industry, as in its unsavoury present-day representatives, the sweated industries, an entrepreneur might give out work to a master workman, who would supervise actual production. Such a small master must do some organising work, but the management of men rather than of commodities is required if the work is of a routine character. In reputable trades, the separation of intermediate risk-taking from the employing function is still often made; a contractor with no knowledge of building may perform a useful public work at profit to himself if he is able to form a correct judgment of the extent and type of the demand for houses; he may himself take the risk of failure by definitely contracting with a builder to make the houses; he is then a pure entrepreneur, for he has handed over the employing function to the builder.

In large scale manufacture, however, the single owner of a business must combine the two types of organisation; he must employ as well as take risks; sometimes he provides the capital in addition. It must be clearly noted, however, that a man may be at once an entrepreneur and an employer while working with borrowed money. The work of the organiser is to bring together the land, labour, and capital necessary for production; in practice, as in theory, the supply of labour, the supply of capital, and their combination, may be three distinct acts. (Land may

be neglected in large manufacture; when the employer buys it, he considers it as a form of capital.) A builder may supply labour, investors may supply much of the money, and the contractor will provide for their appropriate combination.

Partnership.
Companies. 27. Few men can continue efficiently to supply the capital, the supervision of labour and the responsible work required from a single business head; partnership has long been a valuable means of lightening organising work, especially where a subordinate of proved ability has been promoted. Thus while duties have become complicated, the work is divided; the process has continued by the formation of joint stock companies. The entrepreneur, as such, disappears, and his work is carried on by a group of men. Capital is provided by a large number of small shareholders, the general supervision is entrusted to directors, who are not likely to have a detailed knowledge of the processes of production, but must rely for the detailed supervision necessary and partly also for decisions on questions of policy on paid managers, who have probably been promoted. The manager in a limited liability company of this kind is much more than an ordinary workman, but less than an entrepreneur.

Such a combination may make a powerful and efficient engine of production, but its defects are that the shareholders have little influence on policy and are divided among themselves, while an inefficient or dishonest manager is less easily controlled than in a private firm. The advantages are that the agents of production are effectively combined, and that while the directors can bring a fresh mind to general problems, the best ability in the firm need not be hampered by lack of capital, for able organisers may expect promotion. Such a company can expand at

will; the most capable business head finally loses his powers, or is faced with problems of organisation too large for him, but a company is independent of any single man; a board of directors may thus initiate larger policy changes than an entrepreneur. Big business is tending towards company management, and State departments are also built essentially on the company plan; the advantages and disadvantages of State and municipal trading are similar to those of company management.

28. Co-operative production has not yet received the success it deserves; one main reason for **Co-operation.** comparative failure has been the hesitation of members to give a salary high enough to call out the necessary managerial ability. Socialistic production has also made little progress, if State and municipal trading is excepted, but the Shop Stewards' movement and Guild Socialism present ideals which may result in future action.

29. Modern manufacture thus shows the dominance of large scale methods; this tendency will be studied later. We may now formulate the **Law of Increasing Return.** Law of Increasing Return, which states that in most large scale production an increase in the amount of labour and capital applied to a business leads to improvements in organisation which increase the productivity of the labour and capital employed. As regards results, the law can be directly contrasted with that of diminishing return, for manufactured articles may progressively cheapen with increase of quantity just as food becomes dearer in the same circumstances (owing to diminishing return), but the forces acting are quite different, and the antithesis must not be pushed too far.

30. So far, we have dealt almost exclusively with large scale production; a general survey must now be attempted. Three connecting threads are most prominent in the com-

plex, and in each case historical explanation is required for full understanding; relics of most old-time processes still remain. First, there is the continuous series from hand work to trust factories; the Swiss toy-maker still works by hand, requiring little capital or raw material; developing tools lead to machines, in which the actual process is not controlled by the fingers; the hand loom weaver leads to the factory worker, while the selling process is specialised; as fixed capital becomes important, the individual entrepreneurs are forced into collective action, and producers' groups appear which fix prices or amount of output, like the German "Cartels" or American "Pools"; in the last stage, a powerful group controls immense capital and closely supervises the inner economy of large businesses, forming a Holding Trust.

The type of the individual worker forms another connecting line. At the bottom (as regards money reward) is the unskilled labourer, whose work is almost purely physical. The highest productive type (in relation to present conditions of production) is the man whose work is purely mental, requiring specialised organising ability, though it does not follow that he is the greatest use to humanity; between the two is a continuous chain, and the high reward of the more fortunate is a result partly of the comparative rarity of the requisite ability and partly of the difficulty of rising in the scale.

The last thread is more modern, and connects raw materials with finished manufactured goods. Agriculture and mining are the basal industries in two senses; they produce goods which are almost essential to existence, and also raw materials required for production of luxuries. Land gives food, and also makes manufacture possible. Raw materials are worked through successive stages; they

are attracted forward through the successive production processes by the backward flow of money from the ultimate consumer to the owner of the mine or land.

Behind all is the directive brain of the entrepreneur, given his opportunity by the extension of credit and aided in his combining processes by the miracles of modern transport.

31. Credit will be fully considered in a later chapter ; we may for the present regard it as the lubricator of the economic mechanism. Transport may be regarded either as a similar external aid to production or as an essential part of the process. Even manufactured goods are useful only in relation to the individual consumers, and from this standpoint the movement of matter in place does not differ from that of transformation of matter to another form, for both alike help to satisfy wants. The price of Canadian salmon or Arctic furs is made up almost wholly of transport charges, including profits of merchants. There is no fixed line separating production and trade. The manufacturer does not try to separate the cost of transport from the whole cost of his raw materials, nor does the consumer make such an estimation.

Viewed externally, transport is seen to help production in procuring raw materials and in marketing the final produce. Raw materials for a particular industry seldom occur together ; cases like Middlesbrough, where coal, iron, and limestone, the materials for smelting, occur within a few miles of each other, are rare ; Sheffield now relies on Sweden, Manchester on Egypt, India and America, and Bradford on Australia for raw materials, partly because of the start formerly gained by those manufacturing centres, but largely because of the efficiency of world transport. The same causes work as regards marketing ; Lancashire

sends back cotton goods to cotton-growing countries; more striking still, coals may figuratively be carried to Newcastle in the sense that goods may be exported to a country which could, if it chose, make them more cheaply than the exporters.

Roads and canals in the eighteenth century, and railways in the last century have revolutionised internal trade, as perhaps roads may again do in the present century; steamships have almost created foreign commerce. The stimulating effect on volume of production has been stupendous; on organisation, the effect has been peculiar, for many local industries have been killed through the concentration of production in more favourable districts. Roughly, it may be said that increased transport efficiency quickens those economic tendencies which are being opposed by custom and conservatism, as it widens markets, awakens competition and aids those forces which are struggling for expression.

Probably transport represents a balance of good, though as it usually represents a group of industries built on the large scale, the less pleasant side of fierce competition is often dominant. Apart from the beneficial effect on division and localisation, it spreads the good things of the earth over its surface; where superabundance in one country is exchanged for that of another there is a large consumers' surplus created in each case.

Perhaps the most beneficent feature of transport is its linking power; the mutual aid of a Russian village community is outdone by a system of world inter-relationship. No country is economically independent, and each one has sacrificed part of its self-sufficiency, trusting to world transport to supply the goods it no longer produces; those goods it produces the most economically form its own contribution to world welfare. It may be hoped that the

beginnings of co-operation which transport has already stimulated will prove the precursors of a better economic world organisation. Though English co-operation in production is disappointing, the successes of co-operative farming, or at least the utilisation of farm products, which transport has stimulated in some continental countries (and in Ireland) point the way to future development.

32. We conclude with an account of organisation as found in farming. Agriculture differs in important respects from highly competitive large scale business. Where perfect competition exists, the profits of an entrepreneur represent a positive contribution to production, but it will be seen later that the economic rent of land is a payment to a landlord for which he may give no corresponding aid to production. Thus the tenure of land merits attention.

The growth of population makes improved organisation possible, but this effect in an old country is more than balanced by that of the law of diminishing return, so that the comparison with industry shows agriculture as an exception to the tendencies of the last century. Increasing return holds even in agriculture with regard to labour and capital, but the importance of these is so small relatively to natural forces that the tendency to the increase in size of the individual business (*i.e.* farm) has been effectively held in check; farming is one of the most conservative types of production. At present, food production is bound to the land and this fact necessarily precludes effective localisation; as long as diminishing return is dominant, extensive cultivation necessitates a dispersion of labour and capital which prevents organisation being as effective in agriculture as in manufacture.

Again, farming requires men who can do many small duties at different times, performing perhaps a score of

different pieces of work in the day; such men must be ready to adapt themselves to changing weather and seasonal conditions; relatively, there are so few men on an ordinary farm that each must learn and perform most of the separate processes. Thus there is little room for division of labour, and the farmer himself, who corresponds to the entrepreneur (on the English system of farming) is likely to do some work identical with that done by his meanest labourer. Nature is predominant; while the manufacturer has turned the position, the farmer is still bound by natural limitations and, organise as he may, his progress under present conditions is limited. The same holds good for remarkable ability; unless an able man can so improve methods as to push back the working of diminishing return, his organising powers will be more usefully employed in industry.

A tendency towards large scale production exists in new and fertile lands, but after a time is opposed by diminishing returns. A large prairie clearing may employ many men in the aggregate, of such intelligence that they may be specialised not only as farm labourers, but also to use agricultural machinery. As regards the farming unit, the men are localised, so that modern methods of ploughing, reaping, etc., as well as of selling in bulk may be used to take over heavy work from the labourers. Within Nature's limitations, immense savings may be effected. In manufacture, "land" is subordinate to the other agents; in agriculture it is dominant, and economies are possible only with respect to the associated labour and capital.

33. The pure entrepreneur is almost unknown in agriculture. The landlord often corresponds to a sleeping partner, *i.e.* to a man who may have helped to build up a business in the past, but who now receives payment while others do the

English
Farming.

essential organising work. Many landlords, however, retain a keen interest in their land after they have let it, and they may often rightly demand a payment for their contribution ; this occurs in the English system. England is pre-eminently a country of large estates, as half the land is held by only four or five thousand people ; this is the combined result of the law of primogeniture, by which real estate normally passes to the eldest son, and of the pride of possession of the aristocracy, who delight in increasing their estates and passing them down undivided.

Thus in many cases the land is considered only secondarily from the standpoint of food production ; there are many intelligent landlords or, alternatively, many who possess intelligent agents, who take a pride in improving the productivity of land, and are willing to let it to a capable and trustworthy farmer at much less rent than would be required by a business entrepreneur who had sunk the same capital. In the hands of such owners, the system makes for increasing productiveness of land worked by picked men who, though owning little capital, can borrow money or stock at remarkably low rates of interest. These advantages have raised English farming to a high state of efficiency.

There are defects in this system ; a stupid or unsympathetic landlord with an inefficient agent may act as a drag on a progressive tenant. Again, the tenant has no incentive to improve the land or buildings unless his farm is taken on a long lease ; rent may be raised as a result of the increased value of the land that he himself has improved, or his farm may be let to another without compensation ; this is a very real and serious defect. The sale of land also is still hampered by legal and customary restrictions ; a landowner rarely wishes to sell land to enterprising tenants, preferring to mortgage it, if in immediate want of

money; the method of sale is so slow and cumbrous and there are so many pitfalls as regards legal rights that the free competition so marked in industry is almost absent in the land market.

Thus the economic forces which drive productive agents into the proper channels are seriously hampered; the organisation of English agriculture is undeveloped, but each separate landowner is the head of a system which on the whole works well; within it, he deals with those matters he is peculiarly able to manage, *e.g.* permanent improvements such as buildings, increased fertility, and drainage; the tenant undertakes the management of crops and stock. The latter also takes the whole of the proceeds, paying a fixed money rent to the landlord, which includes not only the payment for the actual land, but also that for the permanent improvements.

34. The Small Holdings and Allotments Acts represent an attempt to soften the abuses of the English system rather than to change it completely. **Small Holdings.** Nearly half of our cultivated land consists of farms of more than 100 acres, and the commonest size is about 60 acres. A hard-working, progressive farmer can usually live on a smaller farm than this, while Arthur Young's dictum that "the magic of property turns sand into gold" contains sufficient truth to make the transfer of land from landowners to such men a thing to be desired. Though a small holding (*e.g.* 20 to 50 acres) is proportionately more expensive to work than a large one, unless the land is very rich, this objection may be more than balanced by the very hard work which a small farmer and his family may be willing to undergo to secure an independent livelihood.

Allotments are equally valuable in that they add to the national food supply (*e.g.* in the late war), at the same time

providing a profitable and often pleasant relaxation to men engaged in other productive work. If the transfer of land were easier and less costly, agriculture would quickly develop a new organisation which would retain the large tenant farmers where they work most profitably while allowing full scope to those independent cultivators, elsewhere known as "peasant proprietors."

35. The dangers of the English system are seen in Ireland, where somewhat similar conditions of tenure hold good, but where the landlords are often alien to the Irish and where an unenlightened and sometimes brutal policy has been the rule. Landlords "rackrented" their tenants, *i.e.* they obtained the largest amount of rent it was possible to squeeze; a growing peasant population was "land hungry" and must obtain plots of ground at any cost, so that competition between the peasants forced rents up to the point which left a bare subsistence for the tillers;² in many cases, the rent offered was an impossible one. The privations suffered by these "cottiers" led to extensive emigration. The system which was suited to the abilities of English agriculturists led to misery in a neighbouring country. The evils have been mitigated by various Land Purchase Acts, and to-day, Ireland contains many peasant proprietors who are proud of clean, well-kept farms which the State has helped them to buy.

36. This hopeful development leads to a consideration of peasant proprietors in general, with special reference to France. These men are usually temperate, hard-working, and very frugal, with a real interest in their work. The great defect of peasant proprietorship is that frugality tends to develop into penuriousness; there is a tendency to reduce consumption below the efficiency level. The more prosperous

**Peasant
Proprietors.**

English farmer, though less independent, is able to live more comfortably than the peasant proprietor, as well as to spend money which will develop the productive efficiency of himself and his children. From the standpoint of the farmer, the advantages of freedom and independence are to be balanced against those of a comfortable existence; from that of the country, the choice lies between thrift, hard work and conservatism on the one hand, and progressive methods on the other.

In France, small holdings are perpetuated by the laws, which have no bias towards primogeniture; custom also is of great importance. America contains many peasant proprietors, but agriculture is there progressive; the farmer is not averse from investing money in education or other forms of productive consumption, while new lands are being continuously opened out. The Eastern states tend towards the English system of tenure; law and custom do not oppose the same barriers to change as in an old country, so that there is a tendency towards the most economical system. The newer West is in a state of health which shows that it is possible to combine the virtues of peasant proprietorship with those evidenced by the more prosperous tenant farmer. In Australia, agriculture is perhaps more progressive still; the last artificial obstacles to beneficial change have been swept away and land is transferred as easily and quickly as other commodities.

37. In the stock and land lease system, the landlord provides part of the stock and other necessities, receiving a money rent in exchange; the Metayer system is, however, commoner, especially in Southern Europe; the landowner may perhaps provide most of the capital required, and in return receives a fixed proportion of the produce, *e.g.* a half; the cultivator thus obtains capital cheaply, but as the owner is interested

**The Metayer
System.**

in the amount of produce obtained, he is likely to supervise methods of cultivation, and may then sometimes demand extra remuneration. A similar system, the share system, is found in the United States, especially in the South.

REFERENCE :—*Adam Smith. Wealth of Nations.*

BOOK III.

EXCHANGE.

CHAPTER VIII.

· VALUE.—DEMAND AND SUPPLY.

1. Value is the central concept of Economics. It cannot be neglected in the study of production ;
Importance it cannot be understood apart from con-
of Value. sumption; it permeates the study of distribution ; its connection with exchange is the deepest and most vital of all.

Exchange follows logically from modern methods of production, for perhaps a large manufacturer may not himself consume a single article he manufactures ; he sells his wares and buys other goods, but this fact should not blind us to the essential nature of exchange, which is the giving up of superabundant goods for others which will satisfy wants more effectively. The trader places a blind but well-merited confidence in the power of money to regulate his buying and selling, but we cannot be too careful to note that money price is simply one example of the economic concept Exchange Value, which will for our purpose be denoted by the simple term Value.

The value of a commodity relative to a second commodity is the number of units of the second commodity which

will exchange for one unit of the first. If a pound of butter exchanges for three pounds of margarine, the exchange value of butter in terms of margarine is three. Great care must be taken that the units are known in the case of each commodity, and when not specifically mentioned they must be taken as being the same in each case; if a stone of potatoes exchanges for an ounce of tobacco, the value of tobacco in terms of potatoes is 224. There is nothing to prevent different units from being used if it is clear what conditions are being observed. Thus we should probably estimate the value of beef in terms of mutton by finding (indirectly, in terms of money) what number of pounds of beef will exchange for a pound of mutton; the relative value of oxen and sheep would be estimated somewhat differently, and we should find how many sheep would exchange for an ox.

2. A more complicated method is generally used; each trader determines how many stamped bits of metal he can obtain for a unit weight (or volume) of the commodity in question. The number of such standard pieces of "money" is called the Price of the particular weight (or volume) of the given commodity. Once for all, the student must realise that price is merely one kind of exchange value which is so useful in practice that it has become the regulator of the great bulk of the exchanges of commodities which take place. Money is in no essential way different from any other form of wealth. Logically, it is as correct to speak of the value of money in terms of coal (say) as the reverse; this is actually done mentally when prices rise or fall, in spite of the artificial bias which leads men to measure coal in terms of money.

The issue is often further complicated by the introduction of the time element; *e.g.* human labour cannot be

measured as a weight or a volume, or even in terms of a simple unit as can a horse or sheep; the unit of labour might be taken as the work normally done in a definite time, *e.g.* an hour. If a man hesitates whether to hire an assistant for one year or to buy at the same cost a bicycle which he believes will last five years, he estimates the value of the man's labour relative to the annual usance of the bicycle to be 5. In all cases, if the value of *A* relative to *B* is (say) 5, the value of *B* relative to *A* is one-fifth, if the size and quality of the units are unaltered.

For the present, it is enough to note that value is a real entity, and that it remains fairly constant from time to time, except in abnormal circumstances. Through long ages, men have eagerly desired gold, and many commodities or large amounts of one commodity have always been obtainable for small quantities of gold; it has always had a high Exchange Value relative to most other things, and other things a low value relative to gold. Some commodities, however, fluctuate enormously in value. Values, stable or unstable, are the economic facts which every successful trader must utilise.

3. Neglecting deeper analysis for the moment, we may assume that an exchange between intelligent men is carried out only when each party gains by it, for each man's private scale of values is not likely to correspond exactly with that of another man. Thus, in backward communities, barter takes place; there may be a rough tribal estimate of the relative values of an implement and an ox; one man, however, may have many oxen but no effective implements, and another may have many implements, but no oxen; the first is likely to estimate the value of oxen lower than the rough communal standard, and the second to rate it higher, while the opposite process will take place with respect to implements.

Barter.

The first man will wish to give oxen for implements, and a second to give implements for oxen, and an exchange will normally occur to the advantage of both. The introduction of money makes no real difference, for money acts merely as an intermediary.

4. The refined form of barter familiar to us as sale and purchase is carried on largely in markets; a shop is only a permanent market stall, and the forces at work are the same as in a cattle market. The term Market is, however, used in Economics in a yet wider sense, and contains two distinct ideas. Firstly, a market is a place in which goods are sold, and secondly, it implies the presence of sellers and buyers who wish to trade.

Economics follows common usage in connecting a market with a particular commodity; just as a market is a collection of keen traders and buyers, so concentrated that no trader who wishes to sell his stock can offer his goods much dearer than his competitors, and no keen trader will sell them much cheaper, so an economic Market implies the presence of competition which keeps the price of identical goods constant throughout its range. Such a market is a region within which prices speedily come to practical equality though there will often be a constant slight difference in price limited by transport costs; it also implies a body of traders dealing in that region in the commodity concerned; a market may thus be a single producer and a single consumer, or it may embrace the whole world.

5. Gold may be transported across the globe at a cost infinitesimal compared with its value, even when insurance is considered, so that the value of gold (measured by any definite standard) is almost constant throughout the world. Coal, however, is bulky, i.e. a comparatively small

**Sale and
Purchase.**

**Effect of
Transport on
Markets.**

amount measured in money takes up a great space; as the cost of transport depends largely on weight and bulk, there is a great difference in the prices of coal in places remote from a coalfield, as evidenced by the present very high price (say) in Italy. Assuming (what is not always the case) that transport expenses depend only on weight, that in a given case the price of tin is £200 per ton, and that of coal is £2 per ton, and that a given transport charge is £2 per ton, then the price of the coal is increased by 100 per cent., and that of the tin by 1 per cent. only.

Thus, even in a small country, the price of coal fluctuates rapidly from place to place; the percentage change in price within a few miles may be more than the difference between England and America for more valuable commodities. A coal Market is thus limited as regards area, though often large in respect to population, even though coal may be exported far outside the limits of the economic Market; incidentally this provides an explanation of the fact that industries tend to grow near the coal supply rather than near the less bulky raw materials.

6. Portability is thus a condition that the market for a commodity shall be widespread; another condition is cognisability, *i.e.* that the quantity and quality of the commodity shall be easily estimated. Wheat varies in quality between wide limits, but the various grades are easily recognised. Thus wheat is easily "graded" into standard classes. A graded commodity may usually be sold without difficulty, especially if in wide and constant demand, for no dealer will hesitate to buy it at the standard rate; grading may be so perfect that a European buyer may put absolute trust in a verbal description of goods he has never seen. Such commodities meet with little resistance to movement, and the difference

World
Markets.

in price from place to place tends to be no more than transport charge.

A steady world-wide demand for a perfectly gradable commodity of which buyers have an effective knowledge may be combined with a portability which, if there is no artificial impediment to sale, may develop a world Market. Such a Market virtually exists for gilt-edged securities, *i.e.* certain stocks and Government securities which are universally known and trusted. Little less perfect is the Market for precious metals and precious stones and (if transport cost is allowed for) for wheat, while the development of cold storage has similarly widened the Market for beef and mutton.

At the opposite extreme stand the bulky and non-gradable commodities. The Market for Aberdeen granite is limited; away from that town the stone is an expensive luxury. Again, there is a limited Market for good clothes, for each suit is made for a definite customer, and grading is thus impossible; however, the introduction of standard suits widened the Market for suits by destroying many tiny Markets, introducing graded goods. Deterioration is another factor; a commodity cannot be properly graded if its quality is not constant, so that there is a tendency to limit the Market; in the extreme case of perishable goods, the Market becomes very small.

The artificial limitations of markets are many and important, and partly constitute what has been called economic friction; such limitations may spring from ignorance, habit, and also from deliberate attempts to restrict trade for selfish reasons, *e.g.* the case of some monopolies, as well as of heavy duties on imports. During the war, the world Market for many commodities split up into a number of watertight national or allied Markets and the effects still persist, though we now perceive

the gradual widening of Markets towards their former condition.

There is a continuous chain between local and world Markets, while for some purposes, a region may be considered as a true Market even when price varies within it, if the difference is due solely to transport, and is insufficient to check extensive trade. Perhaps a better test than price is the existence of keen competition; if this exists, *i.e.* if the buyer in the less favourably situated country can compete effectively with his rivals, they may be said to trade in the same Market in the commodity in question. The term Market is one of convenience, and its meaning may be elastic.

7. We proceed to consider the forces at work in an ordinary town market, and our conclusions will then hold for an economic Market, as regards the play of supply and demand. It must be repeated that these terms suppose a particular price; a pauper has a desire for a motor car, but it is not "effective." The phrase "demand for sugar" is incomplete, but "demand for sugar at the price of a shilling a pound" conveys a definite meaning, for it is the quantity bought at that price. Similarly a man may possess thousands of tons of sugar, but the quantity he sells depends on the price, and varies from nothing to the extent of his holding; the supply of sugar is the quantity sold at a given price.

Exchange Value will now be best approached through price: if values are stable, it is plain that the value of *A* with respect to *B* is the same as the value of *A* with respect to *C* divided by the value of *B* with respect to *C* ($\frac{A}{B} = \frac{A}{C} \div \frac{B}{C}$); if *C* is the money unit, say a sovereign, it follows that the value of *A* with respect to *B* is the ratio

of the prices of equal amounts of *A* and *B*. Thus if a pear costs fourpence and an apple twopence, the value of a pear with respect to an apple is 2. If certain conclusions are reached with respect to price, they will hold also with regard to general values.

8. A superficial view will first be attempted, and the classical doctrines of free competition and self interest be assumed for the present. Consider first a direct transaction between two men, the seller possessing a thousand pounds of sugar. The seller may not decide to part with the whole at less than two shillings a pound, but rather than sell none at all he may offer a hundred pounds at eighteenpence. The supply schedule may run as follows:—

Case of a
single
Transaction.

At the Price		Pounds.
1/6	he will sell	100
1/7	„ „	200
1/8	„ „	320
1/9	„ „	460
1/10	„ „	620
1/11	„ „	800
2/-	„ „	1000

The buyer will be willing to buy more at lower than at higher prices; his schedule may be:—

At the Price		Pounds.
1/6	he will buy	850
1/7	„ „	710
1/8	„ „	580
1/9	„ „	460
1/10	„ „	350
1/11	„ „	250
2/-	„ „	160

At 1/6 a pound, the buyer can obtain only 100 pounds, but he will be more than willing to buy more at 1/7, while

the seller will probably part with nearly 100 pounds more at that price, and so on. At 2/- a pound the buyer will take only 160 pounds, but will probably take nearly 100 more at 1/11; the seller will be anxious to sell it to him, and so on. Now all the sugar will be sold at one price; diminishing utility will appear not in graduated payments for successive amounts, but in the offer of a lower average price for the whole than would be paid for the first and most keenly desired portions only.

There will thus be a bargaining process, each trying to read the other's mind; the buyer will try to utilise the need of the other to sell a little at a low price, and the seller will try to turn to account the strong desire of the buyer for an initial amount. An equilibrium will ensue, and if each reads the mind of the other correctly, the position may be forecasted from the respective schedules; the price will be 1/9, and 460 pounds will be sold at that price. At any lower price, the supply will be less than the demand, and the buyer will wish to obtain more, even at a slightly advanced price; at a higher price, the supply will be greater than the demand, and when the buyer has taken all he desires at that price, the seller would be willing to part with more at a lower price. Thus if a temporary price differs from that which corresponds to equality of demand and supply, there will be a tendency to approach that price. The argument may be summarised by saying that market price is fixed as the price at which

Demand = Supply.

9. The reasoning is similar in the case of a local market where many buyers and sellers congregate, so that there is competition between different buyers and between different sellers, as well as between buyers and sellers. Again suppose there are a thousand pounds of sugar in the

**Competition
between
Buyers and
Sellers.**

market; those who require money at once may be willing to take a lower price than the others, and to sell more at a given price. Some of the buyers may desire sugar keenly; they may buy at a higher price and buy more at a given price than the rest. Thus as the price falls, successive new buyers are reached, and old ones extend their purchases, while the less determined sellers withdraw their stocks and the others probably reduce the amount they are prepared to sell.

The collective demand and supply schedules may be exactly similar to the individual schedules given above; if so, the equilibrium price will again be 1s. 9d., and the amount sold be 460 pounds. If the price is at first much more than 1s. 9d., supply (*i.e.* the number of pounds which the sellers will throw on the market at that price) will be more than 460 pounds and demand less than this; as demand is less than supply, competition between sellers will arise, each trying to obtain the favourable bargain; there will be a margin of profit and sellers (at first the keenest ones) will drop their prices a little to obtain the bargain, for it will be better to get a reduced profit than lose the sale altogether. If undercutting thus begins, the other sellers must follow, and the price falls, the tendency continuing until the equilibrium price is reached.

If the price is at first much less than 1s. 9d., demand will exceed supply and a competition of buyers will ensue. As before, some buyers will offer a new price to obtain a bargain, and thus the price will be raised towards the equilibrium position of 1s. 9d., while all the buyers must conform to the raised price, for sellers will demand it if they can get it from some buyers. It is necessary to assume the presence of competition, for if combination were possible, the buyers might keep the price lower and the sellers higher than under free competition. In practice

competition is partially free, so that there is a continuous tendency towards the theoretical equilibrium price rather than an exact coincidence; the freer the competition, the more rapidly and exactly is the equilibrium price reached, and the smaller are the differences in price in the same market.

The case of perishable commodities, *e.g.* fish, is an extreme example of this "higgling of the market."¹ It may be necessary to sell the whole stock in one evening; the equilibrium price is then that price at which the collective demand is equal to the actual supply, but in this case the action of free competition is complicated by the element of time, for buyer and seller will each try to obtain part of the surplus which normally exists (see p. 76); the coyness of the buyers at first may lower the price below the equilibrium for fear of not selling the stock at all, and sellers will thus lose some of their surplus; again, a buyer may take goods above equilibrium price for fear other buyers will secure them, and he thus loses part of his consumer's surplus. Calculations are rarely exact, for either a perishable stock is sold prematurely at rather less than the equilibrium price or else some is left over at the end and must be sold at very low prices; on the whole, however, the total price obtained is not usually greatly different from the equilibrium price.

10. The preceding case is exceptional; in fact, most trading is to-day carried on, not so much in **Continuously supplied goods.** periodical markets, as in shops and other places where a continuous supply of commodities is assured. The reasoning in this case is similar to the above, and in fact under stable conditions the price will diverge less from the equilibrium than in the case of spasmodic supplies, for the forces which obstruct competition may be gradually smoothed away. Price is still con-

¹ Adam Smith.

ditioned by equality of demand and supply, but these must be treated as flows rather than as stocks. The number of straw hats which Leeds shops are willing to sell per day depends on the marked price, for great efforts will be made to sell them if profit is good, and other shops may be tempted to compete. Thus the price of straw hats is fixed roughly as that which equates the total number which shops will sell at that price with the total number which customers will buy, each number being reckoned for the same unit of time, *e.g.* the day or week.

An assumption has been made in the foregoing account which is almost true for most markets, but is not universally true, *i.e.* that the amounts purchased are not large enough unduly to deplete the buyer's stock of money or, in technical terms, his marginal utility of money is not appreciably lowered. If a man buys sugar or other common commodity, its cost is very small compared with his total resources, but if he buys an expensive article, his shrunken means necessitate a more careful attention to his resources. The difficulty is real where much money is spent on one article, but may be provisionally neglected for the present.

11. More complicated conditions must now be considered, and may be best studied with

The Time
Element.
Futures.

respect to commodities of intermittent supply, *e.g.* wheat. The time element becomes important here; the price of wheat

is in practice defined neither by the actual quantities available (in relation to the demand) nor by a steady flow of the commodity, but by the interaction on the one hand of the expected intensity of demand in the year in question, and on the other of the total amount expected to be available after the next harvest. If a dealer holds stocks of wheat (it being remembered that this,

within limits, is a non-perishable commodity), and believes that the next harvest will fail, he will be loth to sell at the current price and will hold up the wheat for an expected rise. Similarly, if he contracts to buy wheat while the harvest is still uncertain, he will carefully consider the prospects of wheat production in all parts of the world, and also the probable extent and intensity of the world's desire for wheat. Thus, in spring, he may offer a definite price for a portion of the next harvest, relying on his judgment as to the future state of the world wheat market; this is called dealing in "futures."

Futures are a prominent feature in modern trading, especially where the supply is not constant, but seasonal or otherwise intermittent. Their existence shows that even temporary market prices may be subject to influences other than those exercised by the stocks immediately on hand or easily available, or than the extent and nature of temporary desires for the commodity; in some measure the same process holds good for any class of goods of which the stocks are variable or for which the demand schedule alters.

Few goods are so perishable that they must be sold at once, and few are so constantly supplied that the price becomes automatically defined; for most commodities, future demand and supply exert an influence on present price. Yet on looking further ahead stability again appears possible, for it is found in dealing with a period of a few years that the variations in price tend to cancel out, and that price tends to oscillate about a mean level which is called the Normal price; this effect is often most marked among those commodities (*e.g.* wheat) which are most subject to seasonal variations, though the effect of these variations is often compensated by dealings in futures, which tend to steady price. If futures were

unknown, the oscillations would be more violent than they are, but the mean level would probably be not far removed from the mean level when prices are steadied by such dealings.

Function of Speculation. 12. True speculation may serve a useful purpose in equalising the lean and the rich times, holding up stocks and thus slightly raising the price when the commodity is abundant, and releasing them in times of scarcity in greater quantities and at lower prices than would be the case in the absence of speculation. Futures thus serve as a link between market and normal prices, and also tend to bring market prices into nearer relationship with the latter. There is no definite line between market and normal prices, especially in the case of continuously supplied goods; the term "normal" has no precise meaning, but the broad distinction is important and valuable. Beyond normal values are the waves of change in prices which slowly appear as population grows, as productive methods alter and consumption undergoes change; these are questions with which Economic History deals.

Normal price is fixed by the play of supply and demand, but it presents points of peculiar interest. Again we shall suppose the presence of competition and the play of self-interest, as well as the effective action of the law of substitution, though all these forces may be hindered by economic friction. The question must be studied theoretically, for normal price is an abstraction in the sense that actual price is rarely at the normal level for a long period. The difference from market price is seen to be largely on the side of supply; in the case of a large haul of fish, the stocks are given, but in considering normal price, time is granted in which the supplies may be controlled by the producers in response to changes in demand. **Market**

price reacts on the conditions of production ; developments in organisation may occur which will lead to a change in the collective supply schedule, and normal price may be thereby affected.

13. Normal price tends to be governed by Cost of Normal Price. Production, though it may never be identical with it. Actual price records would show wide variations in price, rarely coinciding with variations in cost, though connected with them. Again, the average price would not necessarily be the true normal, though it will not be far removed. The term "normal" rather corresponds to Adam Smith's use of the phrase "in the long run," in the sense that it represents the price that would result if the forces at work at a given time were to continue to act unchanged. In practice, the forces controlling both demand and supply continually vary ; before existing tendencies have time to work out their effects, they may be overborne by new conditions. Thus the term "normal" must be used with respect to a definite period ; the normal price during a period of five years may be very different from that during fifty years ; when this fact is recognised, it remains true that normal price tends to agree with Cost of Production properly estimated.

14. The dependence of normal price on Real Cost is best studied through Expenses of Production. tion, the money price an individual employer has to pay for the factors of production which represent real cost. Consider an average business, or "representative firm," which has a supply schedule identical with the collective schedule of the whole trade, and suppose that this firm remains stationary while others advance or drop out ; the total production of the firm is thus the same as long as the combined production of all firms does not vary.

If the market price is above the supply price for a given product, firms will prosper, and *vice versa*. Prosperity depends on the relation of expenses to market price; the entrepreneur must estimate the price of the raw material required for a given product, the wages of all kinds necessary for this particular work, and the depreciation of machinery, etc.; to this he must add the share of the general or supplementary costs, part of which must be imputed to each portion of product; such costs are interest, insurance, fuel, depreciation of buildings, and also gross profits, in which the net earnings of management are to be estimated at the average rate. A supply schedule may thus be constructed, the quantity being represented by the product made in a given unit of time, *e.g.* a year, which must be short compared with the period in question.

On the demand side, it is supposed that no great changes occur in the schedule, *e.g.* in respect to changes of fashion or the uses of substitutes, so that demand depends on price according to a constant law; the implication must again hold that there is only one price for the same article in the same market. We will revert to supply, and consider case of trade prosperity. Excess earnings, *i.e.* abnormal increase of profits, will tempt new factors of production into the trade, and allow existing firms to increase production, while new firms also may spring up to utilise the attracted production factors.

If the industry follows decreasing returns, the excess profits will soon disappear, and the same result will occur under constant return, for the demand price falls as production increases. Even under increasing returns, the market will sooner or later be so choked by increased supplies that the fall in the supply price will be more than balanced by the still greater fall in demand price, all

prices being reckoned in price per unit quantity per unit time. In any case, the supply price and demand price will become the same, and equilibrium ensue.

If the profits are abnormally low, production is restricted; inefficient firms will fall out, the best firms will slow down their rate of increase, and the representative firm will decrease production. A firm producing under diminishing return will find relief on the supply side, for the price per unit of output will decrease; under constant return, the supply price will not vary, but lessened supplies imply a rise in the demand price (other things being equal); under increasing return, the industry will pass out of existence unless the rise in supply price is more than compensated by the greater rise in demand price as supplies diminish. In any case, the final result will be a temporary equilibrium, demand and supply equalising at a new market price.

15. When equilibrium is reached it is stable (except in certain exceptional cases), *i.e.* any divergence from it will call out forces tending to restore it, provided that the broad conditions of demand and supply are unaltered. If price rises, production is stimulated, demand diminishes, price tends to fall, and *vice versa*. If the supplies of a commodity are suddenly increased, the demand price falls below its former value, and production is thus checked; if the supplies are below the normal, demand price is above supply price and production is stimulated. A whip top placed on its broad surface supplies a mechanical analogy to stable equilibrium; skilfully balanced on its point it represents unstable equilibrium; for if the balance is slightly disturbed, forces are set in motion which drag away the top to a new and different equilibrium.

Cases of unstable equilibrium do occur in Economics,

but, at present, attention is to be focussed on normal conditions depending on stable equilibria. The argument holds good for small dislocations and for short periods only ; large changes acting through long periods may cause lasting changes in organisation ; the nature of the supply schedule itself may thus alter, especially in the case of commodities subject to increasing return, while changes in the demand schedule may be large and permanent. If, however, the schedules do not alter, the equilibrium price and equilibrium amount will not differ greatly from actual supplies and from market price during long periods.

Assuming such constancy, it is now plain that Expenses of Production will never be very different from market price, and will approach still more nearly to that normal price about which market price oscillates. The elasticity of structure of modern business and the keen competition which drives producers to make that amount of commodity which is most remunerative, both lead to conditions very similar to those described above ; friction does occur and there is also a lagging of supply behind demand or *vice versa*, but in the case of a continuously produced commodity the expenses of production will not remain for long above selling price ; nor will price remain far above expenses if competition is effective, else capital will be attracted and production increased. Cases of abnormally high profits do occur, and will be considered later. Again, firms which earn a very low profit may be prevented from closing down by the desire to utilise expensive fixed capital otherwise useless, but such firms cannot grow and must succumb sooner or later.

If now we consider a fairly long period in the history of a firm, so that the producers are able to derive full benefit from their fixed capital, it is plain that the average employer would not embark on a long and risky venture

unless there were a reasonable possibility that he would be fully recompensed by his net receipts in that period; *i.e.* he will expect that average receipts in that period will exceed average expenses by at least as much as the average producer considers to be a satisfactory profit. He will not be able to get much more, else competition will soon bring down profits. Many fortunate producers will get more profits than he, but again, many inefficient men will get less, and thus on the whole the normal price will tend to equal the expenses (including average profits) of this average producer. Even though demand and supply undergo great changes it may yet be stated that the normal price of a continuously produced commodity tends to equal the Expenses of Production of the average producer.

16. The remaining step leads from Expenses to Real Cost. Cost of Production. Cost, *i.e.* the sum of the human efforts of all kinds required for production is, on the whole, roughly proportional to money Expenses. It is not suggested that the money price paid for capital (interest) represents the same real cost (waiting) as the same amount paid, say, for labour, but if the wages paid for labour of the same type are compared, they measure real cost with some accuracy; again, if the expenses of a business are doubled, it is likely that real cost will be about doubled, as every factor will probably increase in amount. Thus, with due safeguards, we may say that if expenses increase, real cost will also increase, and *vice versa*; thus our conclusion is reached that normal prices are governed by Cost of Production, realising that this is a statement of tendency. This was recognised by Adam Smith. "The real price of everything, what everything really costs to the man who wants to acquire it, is the toil and trouble of acquiring it," and by Ricardo:

"It is the comparative quantity of commodities which labour will produce that determines their present or past relative value."

17. The main criticism of this doctrine will be found in the next chapter. A minor objection is the **Criticism of Cost Doctrine.** suggestion that value is governed by Cost of Reproduction. Consider a new patented article, bought and used. After a time, the price may fall greatly, and now the value may no longer be proportional to the original price, but have fallen to a new price, which presumably gives to the producer a lower profit per article; even if as good as new and in keen demand, it cannot fetch a higher price than a new one does, else the cheaper new article will be preferred to it; there are many cases of such a fall in cost. Again, an article may be bought at a low price and appreciate in money value; after 1914 almost all goods increased in price in this way; *e.g.* a second-hand novel might sell for more than its original price. Though this is mainly a monetary effect, in other cases the true exchange value of certain articles may rise owing to changes in demand and supply; *e.g.* an engraving of which the number of copies is limited may steadily rise in price even when the purchasing power of money is constant.

Thus in many cases the value of an article may diverge widely from the original expenses of production, and in the case of goods continually produced, the market price of goods actually in use may tend to equal cost of reproduction rather than actual cost. When economies are made in production, real cost tends to fall and market price tends to fall with it; when an article is progressively harder to make, *e.g.* through increasing difficulty in obtaining raw materials, real cost rises and tends to drag up the value of identical articles already in use; in each case the

effect is most marked if there is no urgent need for the quick using up of the article. A millmaster might put a high value on a loom whose cost of reproduction was low, for before the new loom could be made, trade depression might set in; the same principle holds good for a reference book used in cases of urgency. Again, a rise in cost will not at once increase the price of things in use. If purchasers can delay replacement, however, prices will tend towards cost of reproduction.

Even so, cost of production is the true controlling factor. There are many commodities produced and consumed so spasmodically and uncertainly that there is as little relation of value to cost of reproduction as to cost of production. In regard to good pictures, early fruits, fish supplies, etc., cost of reproduction is almost meaningless. Again, while it is true that reproduction does affect value in the case of continuously produced commodities, it is in just these cases that price is most emphatically influenced by cost of production, for in extended periods, the price tends towards a normal. Now the divergence between the two types of cost represents the actual process of price change; as regards the normal price, production and reproduction are simply two phases of one continuous series; reproduction will give place to a further phase, and so on continuously. Thus, if a long view is taken, *i.e.* if normal value is sought, the cost of reproduction at one time is identical with the cost of production at a little later time; to a manufacturer who looks on the lifetime of his plant as a unit, short period changes will be averaged in the conception of normal cost.

18. As modern large-scale business becomes keener and more efficient, price tends to be still more accurately determined by cost working through expenses of production. A good example is

Costing.

seen in the "costings system" employed in munition works during the war. Employers are apt to estimate their profits by means of a general average of the different profits on each separate branch of production. An entrepreneur fixes the price of the finished articles so that the total expenses are exceeded by the requisite profit; the distribution of profit between the different "lines" is often fixed merely by convenience. It is almost certain that some goods will be fixed at a higher price and some at a lower than would occur if there were free competition between the different processes of manufacture. This is partly deliberate, as a manufacturer may sell widely known and standardised articles at little more than bare expenses, expecting to recoup himself on luxuries for which the demand is more capricious; it is more often due to imperfect adjustment of prices.

Assuming that free competition leads to efficiency, it is plain that production could be made more economical and that, therefore, cost could be reduced. After an extensive experience, a man may become so skilful in diagnosing the weaknesses of any particular business that he may greatly increase the efficiency of business firms who call in his aid by acting as a business adviser. His method is to examine each separate portion of the productive process to discover if each part is separately justifying its existence; this he can do by comparing each section with the corresponding section in some other business which has been the most successful in mastering this particular process. This eclectic method of combining the best qualities of many different firms is capable of great developments, and the general tendency will be to reduce the cost of production to a minimum.

19. Cost of production may be usefully divided into Prime and Supplementary Costs. If a single order is being

executed there are expenses which must be incurred for this special purpose; necessary expenses which would not otherwise be incurred are called Prime Costs. Again, there are the other business expenses not affected by this particular order, but which are incurred in the expectation of this and a large number of similar orders; these are called Supplementary Costs. There is no hard and fast line between the two, but the distinction is useful; outlay which is supplementary with regard to a single order may be prime with respect to a group of orders.

Before the war it was easy to put a single excursion train on a line without disorganising the staff, and such a train could be run at fares which covered bare expenses of running it; it was quite impossible to run all trains at this fare, for it did not allow of the payment of supplementary costs, *e.g.* the wages of porters. In manufacture, wages, especially piece-wages, represent prime cost; in slack times a manufacturer will probably produce a commodity at little above the cost of labour, raw materials, and allowance for depreciation of machinery. Fixed capital is an example of supplementary cost; salaries to managers and other employees whose pay may in times of depression be regarded as a retaining fee are examples of supplementary costs; when a manufacturer takes a long view, selling price must include these as well as prime costs. The costings system is really an attempt to load each product at each stage with its proper share of supplementary costs, though it was noted that familiar goods might be sold to cover prime costs in order to advertise other goods.

20. Industry is increasingly complex, and the above **Derived Demand.** simplified account must be corrected by a **Joint Demand.** recognition of the interdependence of products. First, there is the combination of factors into a

single manufactured commodity ; on the other hand there is the spreading of producers' and even consumers' goods into varied economic uses. Raw materials are desirable only in relation to consumers' goods ; cloth is desirable in itself, and there is thus a demand for raw wool, for dyes, for machinery, for specialised ability, for labour, and so on. The demand for these factors of production is said to be a Derived Demand. Further, there is a demand for the factors jointly ; this is called a Joint Demand. Through books, there is a joint demand for paper, printers' ink, etc. ; through furniture there is such a demand for wood and for carpenters' labour.

Derived demand obtains a great importance from the fact that one of the factors of production is usually labour, and the attempts artificially to control the earnings of labour lead to some of the most important problems of distribution. If there is a temporary shortage of one factor, production may be so checked that the demand price, and therefore the market price, of the product rises. This effect may be very marked, especially if the demand for the product is inelastic ; if the demand is little affected by price, a reduced supply must lead to a comparatively large rise in price. This assumes that the factor is irreplaceable, and that the law of substitution is inoperative. Thus the price of the factor itself under these circumstances will rise, especially if its total cost is small compared with that of the whole process (else demand for the final product would fall off), and if the supply of the other factors is so inelastic that their supply prices will fall when the demand for the final commodity is checked. Thus a small body of highly specialised workers (*e.g.* designers) may sometimes raise their market value temporarily. The change cannot be permanent, for others will in the long run be attracted into the employment.

21. Joint Supply corresponds to joint demand, and the laws of one are similar to those of the other. There is a joint supply of two or more commodities when they proceed from the same source; butter and cheese are examples as are linseed and flax, and leather, beef, and milk. Value is determined by a double equilibrium of demand and supply; first, the sum of the prices of the different goods is fixed by the Cost of the commodity which is the source of the joint supplies and, again, the values of these different goods are determined by a further process. Consider the case of leather; if the demand suddenly increases, it may be profitable to develop stock raising. If this process is carried too far, however, the increase in the supply of meat and milk may be so great as to reduce their price materially; it may be that the new high price of hides is more than balanced by a fall in the price of the other products, and this fact will put a limit to the development of stock raising. The peculiarity of joint supply is that it is usually impossible to alter the supplies of one joint product alone, and thus the movement of the price of one product is limited by the conditions of the demand schedules of the others.

22. Composite Demand and Supply. The divergent movement of commodities through the productive system gives rise to Composite Demand; this refers to many manufactured goods as well as to labour and raw materials. Thus, leather is demanded by bootmakers, by saddlers, by makers of fancy goods, etc. There is a similar composite demand for cast iron, for paper, and for most other goods. There is competition between the different users of any commodity whose demand is composite, and the price is fixed in the same way as in the case of any article offered to a number of competing buyers.

Composite Supply is hardly so definite a phenomenon as composite demand, or joint supply or demand. It exists where there are two or more commodities which satisfy the same productive need. Petrol or benzene may be used to drive cars, but are not quite interchangeable, and in most cases of composite supply, one source is inferior to the other. As regards consumption, the competition of butter and margarine during the butter shortage was a case of composite supply, but in normal times the two commodities are only partly replaceable. The tendency to replace a productive factor by one which leads to a greater income or satisfaction for the same outlay, *i.e.* the working of the law of substitution, is especially prominent in these cases.

These four conceptions are of great importance because their recognition is necessary in the case of nearly every commodity; goods which are not obtained from two or more sources and do not form a basis of two or more productive processes are very rare. The causes of the dearness of leather in a manufacturing country, the cheapness of firewood near a carpenter's shop, or of certain inferior portions of a carcass in a butcher's shop may be left as exercises to the student.

The following diagrams may be found useful:—

JOINT DEMAND.
(DERIVED DEMAND for paper
and for ink.)

paper → books → buyer.
ink →

JOINT SUPPLY.
cow → butter → buyer.
→ cheese → buyer.

COMPOSITE DEMAND.
Labour → bu (wool manufacturer).
→ buyer (cotton manufacturer).

COMPOSITE SUPPLY.
motor bus → buyer (passenger).
tram →

23. This sketch of the old theory of value is concerned mainly with price; the relative value of one thing with respect to another would be obtained through the respective prices. As relative value is defined in terms of the amount of one commodity exchangeable for another, the above survey leads to the great law of exchange, that goods reproducible at will tend to exchange in the inverse ratio of their costs of production. In a primitive community where labour was the sole source of wealth, cost and labour would be identical terms; if one type of implement could be made in an hour and another in three, each being largely used, three of the former articles would tend to exchange for one of the latter; in our complex modern economy, expenses of production is the immediate indicator.

Modern man thinks in terms of money rather than of barter, and it must be noted that price is an artificial concept; the intermediary, money, has so commanded attention that its function as a means of exchange tends to be overlooked; purchase and sale is essentially barter. A further peculiarity is that men tend to consider price as inherent in an object, like colour or weight; a student may find a real difficulty in regarding the price of common commodities, and especially of gold and silver, as conditioned by materialistic concepts like demand and supply.

When this is properly understood, the problem of exchange becomes clearer. We have seen that exchange is governed by laws, but it is not yet clear why it takes place at all. Adam Smith says that in man there is "an innate tendency to barter," and this statement will suffice until the question is more fully considered in the next chapter. Every man is dissatisfied with some of his own goods and covets his neighbour's, so that mere possession may lead to exchange; the chief stimulus, however, lies

in production; most men can more easily, more quickly, and more economically produce certain goods which others require than the large and varied assortment of commodities which he himself needs.

If a man can make *A* extremely well and *B* better than the average, he will be likely to exchange his surplus of *A* for his requirements of *B*, even though he must pay more for *B* than it would cost to make it himself. On this apparent paradox, world exchange largely depends. Again, even though two men may each be able to make *A* cheaper than *B*, exchange may be possible between them. One man can make suits 10 per cent more cheaply than boots, and a second man 5 per cent. more cheaply. Then, even if the first man can make boots ten times as cheaply as the other, it may pay him to concentrate on suit production and buy boots at the higher price. Generally speaking, if the ratio of the costs of production of two articles are different for two producers, exchange may occur.

Suppose that Brown can make seven chairs in a certain time, or four suits in the same time, while Smith can make three chairs or two suits in that time. If the cost of material is neglected, it will be profitable for Brown to make chairs and Smith to make suits, though Brown can make suits cheaper than Smith. Assuming the cost theory, Smith will put the same value on three chairs as on two suits, and will give two suits for anything more than three chairs, *i.e.* four suits for anything more than six chairs. But Brown will give anything less than seven chairs for four suits, for these numbers represent equal cost to him. Thus an exchange can begin at any ratio between 6 : 4 and 7 : 4, and will continue till the demands of each are satisfied. This is practically barter, but the same principle holds for a money economy where the forces at work are much more complex.

We may generalise this statement as the Law of Comparative Costs; where the comparative costs of two commodities (*i.e.* the ratio between their costs of production) varies from producer to producer, a tendency to exchange is set up.

Exchange tends to lessen the inequalities in personal valuations which have given rise to it; a bootmaker will not desire suits without limit. This question will be considered in the next chapter.

CHAPTER IX.

VALUE.—THE MARGINAL THEORY.

1. The previous chapter gave a sketch of the classical theory of value; Mill considered that it could hardly be developed further, but half a century ago it was assailed by three economists who, working quite independently, attempted to overthrow the theory that exchange value is determined by cost, *i.e.* the amount of labour performed in making a given commodity. In England, Stanley Jevons approached the question from the mathematical standpoint, as did Walras in Switzerland; Menger in Austria came to similar conclusions by totally different reasoning, and his work there has been followed by that of Bohm-Bawerk and Wieser. Ricardo had concentrated attention on the side of supply, for he considered mainly those reproducible goods which are in continuous demand and for which the connection between value and cost is clearest. His critics emphasise the importance of demand.

The criticisms of the new school have had an immense influence on Economics, but the attempt to overturn the classical system and rebuild the subject on a totally new foundation failed because the old system was based on essential truths in obvious accord with experience. Its contribution has been explanatory rather than destructive.

2. The Austrian school will first be considered. Starting from the side of demand, it considers that value is a vague term, containing many meanings. This had been recognised by Adam Smith, when he distinguished value in use from value in exchange. The new science spoke of Objective and Subjective value. Ruskin also had said that value meant "the availing of anything towards the sustaining of life, and is always twofold; that is to say, primarily, intrinsic, and secondarily, effectual." He notes that while a thing may contain an intrinsic power to avail towards "life," effective value must contain a capacity in the human recipient to make use of the thing.

3. Food, drink, clothing, and so on are universally recognised to be valuable, and so may be said to possess Objective value. Each individual, however, places his own private valuation on each commodity, which thus possesses a Subjective value peculiar to himself. Objective value is to some extent independent of individual satisfaction; the objective value of food (in a certain sense) is the number of calories of heat it can afford when consumed, and so far is a measurable quantity. Such a concept, however definite, is of little practical use in Economics, but one species of objective value, that of objective exchange value, has been seen to be of the utmost importance; its objective nature is recognised when price is considered, for price bears no simple relation to the desires of those who buy a particular commodity; two men may pay identical prices for similar goods, but are not likely to derive identical satisfactions from their purchases.

In the present chapter, but in no other part of the book, "value" will be taken to mean subjective value, unless otherwise stated; the Austrian school seeks to

establish a relation between this "value" and objective exchange value, and in so doing, finally succeeds in relating its conclusions to those of classical Political Economy. "Value" contains two elements, that of usefulness and that of scarcity. Air and sunlight are useful, but not "valuable." Water in the Sahara is objectively the same as in the English Fens, but in the former case it is "valuable," and in the latter is certainly not, though its usefulness in the latter place is undoubted. If the stock of fen water were suddenly limited it might acquire "value," even though its total usefulness were lessened; all "valuable" goods would lose "value" if sufficiently increased in quantity; scarcity is an essential factor in "value."

4. Value appears when a consumer is dependent on a particular portion of the available stock of a given commodity. A child finds abundant wild fruit on a moor; his desire is keen, but no one particular berry possesses "value" for him because there is more fruit than he can eat. At another time, his appetite may be no keener, but if there is insufficient fruit, each separate berry will be "valuable," for satisfaction is dependent on its presence; contrary to the former case, some desire would be unsatisfied if any of the fruit were lost. If desires do not alter, the presence of "value" depends on the amount of the commodity available. If this amount decreases, the sense of "value" intensifies, and *vice versa*. "Value" is thus quantitative, and theoretically can be measured, though it is not necessarily susceptible to practical measurement. It follows also that goods deliberately made to satisfy man's needs possess a variable "value"; improved productive processes may lead to such an increase of supply as to diminish "value."

This "paradox of value" is well exemplified in the case

of diamonds and water, but the peculiarity of the high exchange value of diamonds does not stand alone. Necessaries rarely possess a high "value," and luxuries often possess a higher "value" than either necessities or comforts. The mystery disappears when we remember that the second element in "value" is scarcity. Diamonds are "valuable" because the eager demand for them has led to the appropriation of all available stores, leaving many wants unsatisfied, and the intensity of these wants has led to a high communal valuation of diamonds. Bread is cheap because the desire for food is soon sated, and there is enough corn to satisfy most of the demands for flour; there is some limitation, for some men are almost starving, others could eat more than they can now afford, while there are many new uses to which corn could be put if the limitation were completely removed. Yet it is true, generally speaking, that the unsatisfied desires for diamonds are more urgent than for bread, assuming, as we must in Pure Economics, that the moral factor is not considered; economists may realise that such conditions are unjust, but must deal faithfully with the appointed material and face the actual facts.

A nation of poor men living on bare necessities would regard ordinary foods as of high "value"; soldiers on active service sometimes find that food, drink, or shelter are more essentially "valuable" to them than gold. Yet, most civilised men hardly know the meaning of hunger and thirst; to them the knowledge that under certain unlikely conditions they will be dependent on a certain definite supply of food does not raise the "value" of present supplies; they know that if a certain article of food is lost, it can be easily, quickly, and cheaply replaced. The scale of "value" of an indigent man might run from necessities down to luxuries; that of a normal

civilised man of normal means, emphatically diverges from such a scale. To a starving man, the "value" of food may be taken as infinite, but under actual conditions the average man would prefer a book or newspaper to an excessive supply of bread; he feels an urgent desire to know the latest news, but little or none for much plain food.

5. A positive meaning for "value" must now be sought, for hitherto it has been explained in terms of deficiency of goods; again, we take a homely example from service conditions, which have the merit of providing an artificial simplification of civilised life. In war time, soldiers were rationed out with special envelopes in which they could place uncensored letters, the issue being restricted. By rigid economy or by sale or barter a man could obtain a stock, say, of six. They had a real "value" for him, and on occasion were sold at a high price to men who valued the secrecy of their correspondence. Obviously, this "value" was due to scarcity and to utility; the fewer the stock, the greater was the value of each. Our soldier might require the first envelope for a letter of great urgency, the next for an important private letter, the next for one he preferred the officer not to see, the fourth he might sell for two francs to a man who was in need of one, the fifth he might barter for a packet of rationed cigarettes, and the last he might save for a possible future need.

All the envelopes were of equal value, for all would serve the same purposes; again, the soldier did not value the particular envelope he used for the most urgent letter more than the rest; he considered the possibility of being reduced to one envelope hardly more than he did that of being deprived of air or food. The "value" he put on it was not affected by the importance it would gain had he

only one envelope; he had enough and to spare for this particular purpose. Thus the urgency of this want had little or no direct influence on the "value" of an envelope. The same reasoning holds for the next four envelopes. If one were stolen, there were still five envelopes left to satisfy the five wants, showing that there were previously more than enough for these five uses.

6. Attention must be concentrated on the sixth use.

The last envelope satisfies a certain small
The Marginal Use. want, that of future provision, and there is only one available object that will serve, for the others have been put (or will be put) to more urgent uses; it must be noted that this may not be the sixth envelope actually used, but that it is the one set apart for the least urgent use. As the last satisfaction depends on the existence of a single definite object, the latter is given a "value" which is measured by the intensity of the desire.

The next step is of great importance; as the other five envelopes are of the same "value" as the last, it follows that the "value" of each of the six envelopes is defined by that of the one put to the use which gives the least satisfaction. If any envelope were stolen, the hoarded envelope would be taken for one of the other five uses, and the satisfaction lost would be the least of the six, again showing that the "value" of each is equal to that put to the least efficient use. A man possesses a given stock of a commodity; he puts different units to decreasingly efficient uses up to a margin or boundary, and the magnitude of the last satisfaction gives the "value" put on each. This is called by Wieser the Marginal Utility (*Grenz-nutzen*), and the term is adopted by modern economists. Marginal utility depends first on the way in which satisfaction changes as the stock of a commodity

varies, *i.e.* on the particular way in which diminishing utility works, and secondly on the amount of the actual stock on hand.

Lingering doubts as to the paradox of value will now disappear. Water is little valued because the stock is so great that all possible uses are served; sometimes it is used so as to give barely any satisfaction, *i.e.* the marginal utility is zero. Diamonds are "valuable" because the least satisfaction given from any actual use is so great that the owner will pay a considerable sum for it; demand is great and stock is limited, so that marginal utility is high.

7. The question of barter is illumined by these facts.

**Relation to
Barter.**

"Innate" tendency to barter is explained not only by the varying valuations of men but also by the fact that these valuations vary with the quantities possessed. If the soldier had only one envelope, he would not think of barter; if he had four, he would still prefer to write another letter but, having five, he would rather have the cigarettes than save the envelope. Thus we know that he places the packet in a certain position in his scale of desires, *i.e.* between the fourth and fifth envelope. If two men hold large stocks of consumption goods, barter may occur if the marginal utility of each man's own goods is less for himself than that of his fellow's goods. Though the marginal utility of a small stock may be high, a larger stock drags "value" down below the barter point.

8. In practice, common commodities will rarely alter in

**Subjective
Exchange
Value.**

"value" so quickly as in the above example, for the introduction of money makes it possible to keep a small stock of most goods, as men know they can buy a further stock easily and quickly. Again, many goods may be kept

without depreciation, *e.g.* precious stones; such goods have a double utility, direct and indirect, in those cases where surplus stock may be exchanged for other goods, by sale and purchase or otherwise. This suggests a new form of subjective "value," *i.e.* subjective exchange value.

If a person has three diamond rings, the "value" of the third may be estimated at £50 if unsaleable, but in fact it may easily sell for £100. Where use "value" and exchange "value" differ, actual "value" will be the greater of the two; an heirloom may have a "value" far higher than its exchange "value." Objective exchange value is a different thing, for it is social, while exchange "value" depends on individual desire. If an heirloom worth £5 is sold by a starving man, the exchange "value" is very great, though the use "value" and objective value are no greater than when the man was well-to-do.

9. The next step leads to objective exchange value, and to its most familiar example, *i.e.* price; the starting point of the classical theory of value is, psychologically speaking, a result rather than a cause. It is true that subjective "values" vary, but convention serves to equalise them. It is so difficult to estimate the money price of an object, especially if expensive and used irregularly, that the normal man falls back on social valuations; he tends to give that "value" to an object that it actually seems to possess in the market. A housewife calculates the satisfaction gained from daily expenditure with some exactness, and would refuse to pay prices much above the current prices, but a man who buys a piano or motor car makes less accurate valuations. Even the housewife will persist in buying an article for years at the current price, though if she broke through daily habits and made an estimate of satisfactions she would find that some money was spent without adequate

Objective
Exchange
Value.

return. Again, high-priced goods tend to be bought by those whose subjective valuations agree with the conventional ones. Thus exchange value tends to be identified with the subjective "valuations" of men who actually deal in the commodities in question.

10. This agreement is aided also by exchange. If a man possesses three watches and no fountain pen, the marginal utility of watches will be low; if another man possesses no watches and three pens, the cases will be reversed. Assuming approximately equal prices for fountain pens and watches, exchange might occur; the marginal utility of watches to the first man would rise, and that of pens would fall; in the other case the opposite effects would occur. Thus, by means of exchange, abnormally high subjective "valuations" tend to fall to the objective level, and *vice versa*.

11. Exchange may now be more minutely studied. Two persons willing to trade will do so if their subjective valuations diverge, provided no obstacles exist. If one man possesses a motor bicycle that he "values" at £50, he will accept an offer greater than this; if another man "values" it at £75, he will pay anything up to this amount for it. The price will lie somewhere between the two subjective valuations. When buyers compete for one article those will obtain the advantage who "value" the commodity most and money least. If buyers offer from £50 to £80 for the bicycle, the owner might be willing to part with it to any of the buyers singly, but when they compete he accepts the best offer, which will probably be not greater than £80, but more than the "valuation" of all except the most eager buyer.

Consider next the case of complete competition between buyers and sellers; suppose that boots are in demand in a

market town. Each buyer and each seller will place his own "valuation" on boots of a given quality. This will be so low for some buyers that no one will sell to them, and some sellers may wait for keener demand rather than sell at the low price which will attract purchasers; obviously neither of these classes will affect price. Many other buyers could obtain boots were it not that competitors offer higher prices, and many sellers could sell at high prices were it not for competition of traders who will sell cheaper. Some bargains will be easily made, for a few sellers are eager to sell even at a low price, and some purchasers to buy at a high price, but even these buyers and sellers will dissemble their eagerness so as to secure the benefits of uniformity of price; the keenest buyer need not pay more than he who is just decided to purchase.

Suppose by the "higgling" of the market the final price has nearly been reached. Some buyer will have failed to meet a seller whose "valuation" is low enough to please him; for the keenest sellers will have dealt with the keenest buyers; some seller will just have failed for a corresponding reason. If these two meet, it may be that the "valuation" of the buyer is a little higher than that of the seller, and a sale will occur; if it is not higher, there will be no sale. The price of the boots will lie between the two "valuations."

All the other actual traders will be satisfied with prices which lie outside these limits, on each side, for they are more willing to trade than these last; they will certainly be satisfied by a price which will suit the latter. Thus the price on which the least willing actual traders are agreed will satisfy the largest number of pairs of buyers and sellers; the more willing traders accept it, and the traders in question would accept no other. Unsuccessful buyers and sellers cannot affect the price, which is

therefore limited by the subjective valuations of the buyer and seller who are only just induced to trade. These two may be called the marginal traders; price is thus settled at a point not less than the "valuation" of the marginal seller and not greater than that of the marginal buyer.

In the above instance, variations in "valuations" are more important on the side of demand than supply, because the "valuation" of boots by a bootmaker is subjective exchange value; the seller has no personal use for a large stock of boots. If a seller expects a falling off of demand or if he prefers quick returns to a large rate of profit, his "valuation" will be low. In the case of manufacturers who make standardised goods in large quantities, the differences in sellers' "valuations" almost disappears, while customers' "valuations" present a nearly continuous chain; price is in this case settled by the "valuation" of the marginal buyer.

12. This argument has been different in form from that of the classical economists, but similarities are everywhere to be found; the marginal law of price implies the equality of demand and supply in the marginal zone. The last paragraph leads us back to familiar ground. Suppose the supply of (say) rubber soles is temporarily given. If all are just sold, the price will be the "valuation" of the marginal buyer. It will thus depend on the number of people who desire soles, their intensity of demand, the marginal valuations of money to the buyers, and the effectiveness of diminishing utility. If the price is too low for the producers, production will be checked, the marginal "valuation" will thus rise, and with it the price. If the price is more than satisfactory to the producers, production will expand, but a new level of consumers must then be reached, the marginal "valuation" must fall, and with it the price. In either

Relation to
Cost Theory.

case, production is so affected that the price tends to equal the cost of production. Thus the classical law is reached from the side of demand.

The Austrian economists attack the old doctrine that price is determined by cost of production, and also that form of it which identifies value with the amount of labour embodied in goods, labour being understood in the broadest sense. It is easy to show that cost of production has no direct influence on value; if a new commodity is manufactured in the expectation of demand, the fact that labour has been expended on it has no effect in aiding its sale, and thus it may have to be sold far below actual cost price. The influence of cost is, however, plainest in the case of reproducible goods which are continually made and consumed; even here, it is plain that if demand suddenly falls off so that the new marginal demand price falls below cost, the fact that the latter is greater than the price at which the supply will be bought up has no influence in raising the price.

13. The Austrian economists have made an interesting contribution to the problems of joint demand.

Application to Joint Demand. Goods which are combined so as to form an economic whole are called Complementary Goods, and are peculiar in that their value in combination may be greater than the sum of the separate values. The values of a pestle and mortar separately are each small, but in combination their value is greater. A rough estimate of the value of each in combination may be obtained by calculating the loss in value when one factor is absent. Suppose a pestle alone is worth a penny, and a mortar alone is worth a shilling, the combination being worth 1s. 6d.; if the pestle is lost the mortar is worth a shilling and thus the value lost is sixpence which, Menger argued, must be the value of the pestle in com-

bination. This cannot be a precise method, for the value of the mortar in combination would be 1s. 5d., so that the total combined value would be 2s. 1d. A better but less definite method is that of Wieser; knowing that the same goods figure in many different combinations he attempts by a series of equations to "impute" a value to each complementary commodity, the values of the products being known.

The question is of especial interest in regard to combinations of goods some of which are replaceable and others are not, and derives special importance in relation to questions of distribution. If complementary goods are fully replaceable by other units their value cannot rise above that obtained in outside uses, but if there is any element of dependence on a particular commodity, the value may rise above that outside the combination. The value of a penholder, as of a nib, is trivial, for each may be easily replaced, but if the writer is dependent on a nib of especial make, obtainable only with difficulty, the value of the nib to the owner will be very high if the need for it is urgent. So under certain conditions a specialised form of labour may rise in value temporarily and obtain higher wages, if indispensable and irreplaceable.

14. Jevons' theories may be considered more shortly, for much of the argument is similar to that of Jevons. the Austrian school, and, in addition, the ground was cleared in the chapter on consumption. The essence of the theory is the attempt to show that value-in-use and value-in-exchange (as used by Adam Smith) are merely different forms of the wider conception of Utility. His *Theory of Political Economy* was mathematical in form, but his conclusions may be translated into common speech. Pure Mathematics cannot pretend to deal with complex human phenomena, and Jevons followed the early

economists in dealing with artificially simplified conditions. He makes use of the conception of "indifference"; for example, a man consumes a commodity until he is indifferent as to whether he consumes another unit or not; until indifference is reached, there will be economic movement of a kind hitherto called "substitution." The Law of Substitution leads naturally to the Law of Indifference, that in the same open market at the same moment there cannot be two prices for identical articles.

15. Total Utility (see Chap. III.) for a normal commodity increases as the stock increases, but not so fast as the stock, so that the additional utility of an additional small unit continuously diminishes; we found that sooner or later this additional utility may become negative, and the total utility decrease with increase of stock. Jevons gave the name "degree of utility" to the additional satisfaction given by a slight increase of stock when the stock was at a given level. (N.B.—Jevons dealt with consumption rather than with possession, but we have seen that the laws of each may be considered on the same basis.) His highly abstract reasoning leads to the conclusion that the degree of utility of any commodity is equal to the differential coefficient of the total utility of the amount already possessed; in non-mathematical language, that the value-in-exchange (degree of utility) of any commodity is the slight increase of total satisfaction given by a small increase of stock (i.e. increase in total utility), divided by that small increase of stock.

16. Jevons, like the Austrian school, begins with the individual. Let us take a definite example to illustrate his theory, avoiding mathematics. A boy has a hundred marbles and a hundred nuts; he would rather dispense with nuts than

Final
(Marginal)
Utility.

with marbles, if he must give up nuts or marbles completely, but in fact he has marbles to spare while his stock of nuts leaves him unsatisfied. For an extra marble he would grudgingly do a minute's weeding; for an extra nut he would weed for five minutes. The degree of utility of one marble is the total disutility of a minute's work, as he is indifferent as to whether he shall earn the marble; the degree of utility of a nut is the total disutility of five minutes' work.

Assuming that a minute's work is a true unit, *i.e.* that five minutes' work implies five times as much disutility as one minute, it follows that the degree of utility of the nut is five times that of the marble. It is plain that if the boy wished to exchange marbles against nuts, or *vice versa*, his own idea of equivalence will be five marbles against one nut, as long as he possesses a hundred marbles and a hundred nuts. Jevons gave the name Final Utility to the degree of utility when consumption (or acquisition) was finished; this term has now given place to Marginal utility. Thus goods exchange in the inverse ratio of their marginal utilities; their relative values are in the direct ratio of these utilities.

The theory may be generalised, for exchange brings individual values into rough consonance with social values. Under perfect distribution, with absolutely unhampered exchange, social and individual values would be identical; as it is, a high average individual valuation must correspond to a high market value. The same forces act in every case; if water is superabundant, its marginal utility and therefore its exchange value is zero or even negative, though its total utility may be large. The world's stock of diamonds is relatively small; total utility is thus comparatively small, but marginal utility is high, as is also exchange value.

17. In a "catallactic community," i.e. a body of persons between whom exchange is unrestricted, relative scales of value are brought into correspondence. It is to be noted that there can be no question of comparing the satisfactions of two different persons directly, but the money measure enables us to compare roughly the marginal satisfactions for two different commodities for the same person. If one boy will exchange five marbles for one nut, and another three marbles for a nut, then we know that the second values marbles in terms of nuts nearly twice as much as the first; we know nothing as to the marginal (or other) satisfactions the two boys obtain relative to one another from either separate commodity. The first boy may quite likely derive greater marginal satisfaction from marbles than the second does, though relatively to nuts he values them less.

Consonance of scales in a catallactic community is brought about by the working of diminishing utility. If these two boys meet, conditions for exchange exist; the first will give up marbles for nuts even if his absolute marginal satisfaction from marbles is greater than that of his comrade; the reasoning is the same as in the case of comparative cost.¹ After an exchange, the marginal utility of nuts to the first boy will diminish as his stock increases, while that of marbles will increase; the opposite process will take place with respect to the other boy. The first boy's ratio of exchange will fall below five, and that of the second boy will rise above three; the difference in the ratio will lessen, but if it does not disappear, each party will obtain an advantage by further exchange, though the incentive to barter will diminish. Each exchange lessens the difference in ratio which gives rise to it and exchange (if there is no friction) continues as long as such difference exists;

¹ p. 207.

in our example exchange will continue till the ratio is the same for the two boys.

Thus, so long as there exists in a catallactic community any difference in the ratio of exchange for any commodity for any two persons, exchange which will bring the relative marginal utilities into agreement will occur. In such a community there would be a social scale of relative values, and this would be the scale of each individual, so far as he possessed the commodities in question; a man may not possess a commodity at all because it may not be obtainable in successive small units, *e.g.* motor cars; again, the least amount of a commodity worth having (the "minimum sensible") may have a utility below its place in the social scale, for some goods are bought in quantity or not at all. So far, however, as a commodity is possessed, free exchange will tend to bring its marginal utility to the same position as it holds on the social scale

18. The intervention of money merely brings in another commodity, the laws of money are the laws of general exchange. Using a unit of money, *e.g.* a sovereign, as a fixed standard, marginal utilities may thus be compared by means of their prices; it follows that whereas purchase and sale spring up because marginal utilities vary, these processes tend to force individual valuations into the same ratio as market prices.

This would occur in actual life in the long run, in spite of retardation by economic friction, were it not for the processes of production, which offer new stocks to consumers and thus disturb the process of equalisation of scales of value. Exchange is never quick enough to finish its work, but production cannot cause excessive disorganisation, for as relative marginal utilities change from man to man, exchange takes place the quicker as differences become more prominent. Quick production stimulates trade.

To return to our illustration. If the marginal utility of a nut is five times that of a marble its value in marbles will be five, no matter how the goods were obtained. We supposed extra nuts to be obtained by weeding, and disutility gave a measure of positive utility. Thus a marble will exchange for nuts in the inverse ratio of the disutility of the weeding; if twice as much weeding is done for a nut as for a marble, then two marbles will exchange for a nut. Now this disutility is the effort required to obtain the commodity, *i.e.* the cost of production. This theory, like the Austrian theory, leads then to the law of the classical economists that the value of reproducible goods is the same as their cost of production.

19. The new methods began with the individual and led to the social; they began with consumption and led to cost; they began with goods and barter and led to price; in general, they began with the theoretically simple and fundamental concepts and led on to those theoretically difficult and complex conceptions which are so familiar in practice. In attempting to explain the obvious, Jevons and the Austrian school brought out unsuspected relationships; articles of faith of the old Political Economy are reached almost casually by the new methods.

Yet Jevons overrated the advance in knowledge he had made, for he believed he had overthrown the old methods. Ricardo and his successors took the business world as they found it, and tried to explain obvious phenomena; in so doing they neglected the full study of consumption, but this was allowable, for the dominant facts of business life were best understood after a study of supply. Ricardo never lost sight of demand; he says that "Utility is not the measure of exchangeable value, though it is absolutely essential to it," and again, "There are some commodities,

the value of which is determined by their scarcity alone." Jevons sought ultimate explanations, refusing to be bound by existing conditions, but his work was auxiliary to that of Ricardo rather than destructive. When Ricardo speaks of quantity of labour as "regulating" value, he mentions expressly "such commodities only as can be increased in quantity by the exertion of human industry, and on the production of which competition operates without restraint."

Jevons attacked especially the doctrine that appeared to state that value was "determined" by cost, though his own equations showed that under certain conditions value and cost tend to agree. He shows that cost affects value only through the influence on supply and hence on the "final degree of utility." Not content with denying the direct influence of cost on value, he expresses the opinion that "Value depends entirely upon utility." Ricardo and Jevons each saw part of the truth very clearly, but neither stated the whole problem so that the interaction of two factors of approximately equal importance was made evident. Value is regulated by demand and supply acting together and the study of neither side alone can provide a complete solution. The words of Dr. Marshall cannot be bettered: "We might as reasonably dispute whether it is the upper or the under blade of a pair of scissors that cuts a piece of paper, as whether value is governed by utility or cost of production. It is true that when one blade is held still, and the cutting is effected by moving the other, we may say with careless brevity that the cutting is done by the second; but the statement is not strictly accurate."

Thus in the case in which supply is fixed and goods are non-reproducible within a short period, *e.g.* perishable food or works of art, the value of these particular commodities will be settled by the expected utility to purchasers; in

the case of reproducible goods which are produced at the same price per unit whatever the amount made, *i.e.* which obey the law of constant return, the market price will sooner or later be equal to the cost of production: a higher or lower market price will stimulate or check production, thus altering marginal utility, so that the price may, in a sense, be said to be determined by cost of production. On the whole, utility is a more prominent factor in short-period price determination, and cost in normal value, but in each case demand and supply play their respective parts.

Jevons would have given up the term "value" and for it have substituted "ratio of exchange," but the Austrian school has shown that the word is almost indispensable for the study of the relation of consumption to production. Menger's definition that "value" is the "importance which certain goods or quantities of goods have obtained for us in that we recognise ourselves to be dependent on their disposition for the satisfaction of our needs" suggests what is undoubtedly true, that "value" would appear in a community where exchange was unknown. Value is still the most important concept in Economics.

20. Perhaps the most important contribution of Jevons and the Austrian school has been the stimulating effect of their brilliant work on later economists who have, on the whole, accepted the main doctrines of Political Economy.

Effect
on later
Economists.

The marginal method is now one of the most powerful weapons of the economists, and a later generation has accepted the new methods while continuing to give homage to the great founders of their subject. But it must be understood that marginal phenomena are effects rather than causes, and are like thermometers, which register temperature without influencing it. Economic forces act throughout the whole social organism, but their effects

are obvious only at the margin, where there is a fringe of incessant movement, giving useful information as to the whole organism; over-supply of fish is recognised in the purchases of the poorest housewives, trade depression is seen in the bankruptcy of the poorest manufacturers, the demand for officers was made plain in the use of the services of "dug-outs," and so on. These are the straws in the economic current, and throughout the subject there exists the opposition between total effects, hard to estimate but essentially important, and marginal effects, often calculable, but useful rather in the light they throw on total effects than for their intrinsic importance.

21. The marginal method must be used with caution ;
it is often possible to construct chains of
The Marginal reasoning which have no reference to fact,
Method. for substitution may not be fully operative ;
the warnings against the abuse of the deductive method
are needed the more when a new theoretical process is discovered. Again, the marginal method holds only for small increments; results based on the successive consumption of units costing a few pence each may be inapplicable to cases where increased consumption must take place by large increments; "marginal motor car" conveys little meaning in respect to a man who can just afford a single one. Other difficulties, *e.g.* the relation of a stock of goods to a rate of supply are also met with in the old methods.

An example of the use of the marginal method is seen in relation to Net Product. An entrepreneur may consider that a factor of production may be employed more fully than it is; he believes that the employment of an additional unit will lead to an increase of product which, when all allowance has been made for accompanying changes, will more than repay its cost. The entrepreneur will continue to apply this factor until the net addition to the

product caused by the last unit is barely greater than the cost of such unit. Thus it is plain that the price the man must pay for such a factor will tend to be the same as its marginal net product. Distribution gives ample scope for the use of the marginal method.

REFERENCES :—See Chapter III. on Consumption ;
also *Walras*. *Economie Politique Pure*.

CHAPTER X.

INCREASING RETURN.—MONOPOLY.

1. A realistic survey of economic conditions makes evident a line of division between the agricultural and manufacturing industries. On one side are fairly contented farmers, rarely making large fortunes, but normally earning a satisfactory living, whether the soil be good or moderate; in spite of great differences in harvests, the keynote of the system is individual stability. Some farmers fail, but the great majority avoid ruin. On the other side are manufacturers, men who take large risks in the hope of great success. Failure is common, but on the whole these men form the money-making class. Though manufacturing methods are more certain, more calculable, and more easily controlled than is agriculture, competition has led to instability and to violent changes in market conditions.

The cause has already been suggested. On the whole, agriculture is subject to diminishing returns. These do exist in manufacture where a particular factor is used in excess of the most economical quantity, but such miscalculation may involve a part only of the whole productive process; in any case it will represent a lack of individual organising ability. In agriculture, even the best organiser cannot in the long run avoid decreasing returns.

First consider agricultural values. At any moment there is a given supply of wheat. With the usual assumptions, we will apply the marginal method; the whole amount will be sold at a rate not greater than the demand price of the marginal buyer, who is indifferent as to whether or not to purchase at the marginal rate which is his demand price. The whole will be sold also at a price not less than the marginal cost at which the most expensive portion has been produced. If the marginal demand price is greater than the marginal supply price, the producers may obtain more than normal profits and will be tempted to increase production. If so, the marginal cost must rise, unless increased production is obtained by better organisation. Marginal demand price falls at the same time, so that abnormal profits tend to disappear, and marginal demand and supply prices to be equalised. Thus there is in agriculture an attractive force tending to bring prices to the normal; diminishing returns steady the market, though they lower total produce.

2. The application of the marginal method to increasing return leads to a peculiar difficulty. Consider a photographer who sells post cards; initial expenses are large, later ones small. Suppose that marginal demand price is steady for small changes in supply. He takes orders for fifty, and finds that the least willing purchaser will pay sixpence per card, cost being threepence. Encouraged, he seeks a larger circle, and finds that the hundredth buyer will pay scarcely less than sixpence; cost is now a penny. Thus instead of the two marginal prices being drawn together as in agriculture, they actually diverge, and conditions become even less stable. For a time, the more cards he can produce, the greater is his

**Increasing
Return.¹
Apparent
breakdown of
Marginal
Method.**

¹ Or decreasing cost (per unit).

profit per card. This hardly seems to bear out the supposition that value is fixed (after movements towards equilibrium) by the equalisation of marginal demand and marginal supply price.

It is not enough to answer that marginal demand price never is quite constant, for the same result would occur if marginal demand price fell, but less quickly than marginal cost, the latter being originally less than the former, as in the first case. If the hundredth purchaser would pay only fivepence, this would fix the higher limit for the whole if a hundred were to be sold, but the profit per card would still be fourpence as against threepence for the smaller number. This cannot of course go on indefinitely; sooner or later demand price will fall quickly as supply increases; equilibrium will occur at last after a period of instability. None the less, a further explanation is desirable.

3. Further, the supply price will not be the same as marginal expenses, but higher; in agriculture, **Supply price not the marginal expenses.** a farmer will willingly accept marginal expenses in exchange for every unit produced, for other units are produced more cheaply than the marginal one; in our example, the seller cannot afford to sell at the price representing the expenses of the last unit, for the other units have been produced to less advantage. Again, marginal cost cannot be taken to mean the cost of the most expensive unit, for this is not a marginal unit, further production being advantageous. Neither will such maximum cost fix the price of the whole, for the seller may profitably set the price below the maximum, as he will be compensated by the units produced at less expense.

This will not happen to a skilful farmer, for he can stop production at will, while the photographer can do so only at the sacrifice of the gains which would accrue from the

cheaper production of a larger quantity. The farmer may consider the most expensive unit as separable without affecting the remaining production, but the photographer can limit the supply of expensively produced cards only by cutting off that of the cheaper ones. If a farmer can raise one quarter of grain at forty shillings and a marginal quarter at eighty shillings, he will demand eighty shillings for the whole crop or decrease production; the man whose limiting cost of a penny per card necessitated a previous cost of threepence will sell at a price between these limits determined by marginal demand; this price will tend, in the long run, to be not far removed from average cost, unless initial expenses are disproportionately great.

By the use of mathematics and the aid of negative quantities it can theoretically be shown that the same law holds in the two contrasted cases, but the resemblance is not obvious. It is much better to consider the total production of our photographer as an indivisible unit.

4. Instead of saying that an extra unit costs a definite

**Influence of
Competition.**

extra amount, it may be said that unit cost is found by dividing total cost by the number of units, the fall in unit cost is then found by comparing two quotients. If competition between two or more photographers exists, then the conception of marginal cost again appears; though the marginal method is inoperative within each business it is usefully applied to the determination of short-period price in its application to different businesses, if demand is normally elastic. A single producer would willingly make the whole amount required at a very low price, but he is met by competition as well as by limited demand. If every producer can make a profit which tempts him to continue, the price will be fixed by the average expenses of the marginal producer, *i.e.* the one whose expenses are the greatest, and this cost

will tend to equal the marginal demand price. In the long run, we shall see that the expenses of the average firm will be a more important factor; in industries subject to increasing returns there is a general tendency for market price to move in process of time from maximum expenses towards a minimum.

Thus even under competition the influence of marginal cost is not as clear as in agriculture. An extreme example has purposely been taken. Our photographer can easily and quickly extend production; when initial expenses are paid the future cost per unit will be fairly constant for each individual card; production is simple and of a routine character, while there is no question of elaborate organisation. Modern business contains an element of increasing costs and also an element of decreasing costs which has been analysed in the above example, while the time element is an ever present complication.

5. Consider now the manufacture of a new type of rubber soles. They are introduced by a firm; their success leads to competition from other firms, and each business obtains a steady sale. Leather for some reason now becomes scarce, and repairers' charges increase. Men find the new soles effective, and the demand quickly develops. Suppose that the materials required are things in common use, so that the total demand for them is hardly affected by their increased use in sole-making, and that there are opportunities available of improved organisation if production increases.

The first sudden effect may be a rise in price, for marginal demand price will rise while supply is temporarily constant. In the case of any industry subject on the whole to diminishing returns this effect would be permanent, and conceivably it would be intensified when production

Effect of
extended
production
on Price.

(as apart from the goods present in the market) was increased. In our example, increased production brings economies, so that expenses per unit will decrease. As this occurs in every firm, the effect will be to decrease the expenses of the marginal firm, and force down the price. (Note very carefully the existence of two types of margin, *i.e.* the marginal product of a particular firm and the product of the marginal firm; if there is only one firm in an industry, marginal product alone is in question.) This occurs in spite of the fact that a single firm would have no need to lower price in face of increased demand, but might take for itself the whole of its own internal economies.

6. Thus in an actual large scale industry, the effects of increasing return, whether due to improved organisation or to the fuller effectiveness of an initial outlay will be partly masked by other tendencies and partly moulded by them so that the course of events which was so clear in the case of the photographer is recognised only as a slow downward movement of price; nevertheless, the forces at work are the same.

Again, the time element is important in that those firms which are most effective in settling the short-period price will probably be just those which will be squeezed out when competition becomes more effective under the conditions of increased demand. Under increasing returns, a firm may willingly consent to lower prices if it is thereby rid of competition, for if it can obtain the whole trade the resulting economies may far more than counterbalance the fall in price. This is an advantage quite independent of that developed below, *i.e.* the choking of competition with a view to a later advance in price. Thus if the number of competing firms is lessened by a lowering of price on the part of stronger firms who are, however, themselves compe-

The Time
Element.

titive, the marginal firms will probably disappear ; the expenses of the marginal firm will thus be lower than before, price will fall, and producers will recoup their losses by increased economies consequent on increased production.

7. The power of an individual firm which makes goods according to increasing return will grow as its *size* grows, so that the scales are weighted in favour of the biggest concerns. Competition is usually much keener than in the case of farming, for in the latter case, effective obstacles come rather from the inertia of nature than from the competition of other producers. If a farmer could gain the whole custom of another, he might not produce the amount required as economically as before, but the case is otherwise in large business ; often a firm will take full advantage of economies to produce far more than it can sell with certainty, in the hope that as a result of skilful advertising the whole stock can be sold ; even if it cannot reach a wide enough market it will try to sell the greatest possible quantity at the best possible price and then offer the remainder in different markets (*e.g.* abroad), at a price covering prime costs only. In this competition, the most efficient firm may in time drive all others out of the market, as it may be able to produce at prices unremunerative to competitors. The Law of the Survival of the Fittest is peculiarly applicable to industries subject to increasing return.

Thus those industries in which economies are the most effective tend to pass into the fewest hands, and if on a large scale, tend to become subject to "cut-throat competition," which is a common feature of American business. Returning to our illustration, we note that many firms will share in the original production of rubber soles (if there

is no patent), but that initial successes do not decide which firm shall ultimately control the market. The pioneer firm which can most effectively utilise new conditions may not be the most successful when the problem has become one of the organisation of a business which has reached the routine stage.

8. Realising that a wider market brings economies, a large firm may sell its goods below Total
Struggle for Cost, covering hardly more than prime cost,
Existence. hoping that competitors will be driven from the market. If two or more firms are thus competing, the fight becomes a struggle for existence which may not cease till one firm is ruined and another obtains the spoils. Small firms will soon succumb, but if the larger ones are equally matched and possess large resources, the fight will be long and each will produce for a considerable time under total cost. In the end, there must be agreement or else ruin of some of the competitors, for in the long run, supplementary costs must be covered or bankruptcy will occur.

In the United States, and to a less extent in other progressive countries, the concentration process often continues until competition in its old form disappears. When firms are small, competition is extensive; as they grow in size and decrease in numbers, competition becomes limited to the rivalry between a few firms, but this rivalry becomes the more intense as its bounds are narrowed. The victor may have the control of such immense quantities of fixed capital that he need fear no competition when his chief rivals are ruined, and he is left alone to make the best possible terms out of the consumers without immediate fear of price undercutting. His position may be further strengthened by control over markets and, especially in America, where large businesses may obtain differential

advantages on railways, etc., he may use social and political influence to retain his advantages.

The victorious firm has built up a position and has gained experience which no intending rival, however wealthy, can acquire quickly; successful business is very largely a matter of personal relationships which are of slow growth; organisation is perfected only after years of trial and error, however easily the other factors of production are obtained. When a firm has killed competition, its advantages are thus very great, and if the struggle for supremacy has been long and bitter, it is the more probable that new firms will be undersold and ruined long before they can obtain a footing. Such a successful firm has obtained a real Monopoly.

9. Big business tends to monopoly, but is not the only means to that end; different types of monopolies possess so much in common that they may be considered together in relation to problems of value, regardless of their origin. Natural monopolies exist; the owner of a rich oil well, of a famous abbey, of a beauty spot, of a valuable site in Blackpool, Nice, or Park Lane, is to some extent a monopolist; many men have been made rich by the discovery of unsuspected wealth on apparently useless land. England is owned largely by men who obtain big incomes through the accident of possessing land which is essential to the well-being of the population.

Some monopolies are legal, in the sense that they are directly due to State action; it is often difficult to obtain permission to build a new railway, but when built, competition is prevented by the very fact that State consent is needed for new lines. In England, before the war, the railways held a practical monopoly of transport except over short distances. Inn-keeping is another example of

legalised semi-monopoly, while State businesses like the Post Office are still clearer examples. Again, monopolies may be built up by an intelligent understanding of consumers' needs and such trade monopolies may be independent of increasing returns; cases often occur where demand is restricted; the names of Bradshaw, Wisden, and Debrett suggest examples, as also the names of familiar meat extracts and other foodstuffs.

10. Increasing return does not invariably lead to pure monopoly. Big firms may fear the continuance of cut-throat competition, which weakens even the victor when he produces under total cost for a long time. Such firms may come to agreement, thus combining against the consumer, and obtaining a partial monopoly. The terms "ring," "combine," "pool," "syndicate," etc., are of little use to us because their meaning is not precise enough, but there is a tolerably clear distinction between Trusts and Cartels; a trust is a unified business under single control, and a cartel is a collection of businesses acting in common. These represent the more permanent attempts to stifle competition.

In America there are temporary alliances which have the same aim; men or firms may make a combine to "rig the market," *i.e.* to influence market conditions, and to "corner" the supply, *i.e.* to buy up all the available supplies in the hope of so raising prices by restriction that a great profit may be made. If such a combination becomes more permanent, a pool is formed, and each firm is voluntarily bound to certain conditions of supply and price; each unit receives a certain percentage of the total profits. Lack of loyalty often breaks up these unstable combinations. The railway agreements between certain groups of English railways before the war were somewhat of the nature of pools.

11. Cartels are more permanent in that they have a definite constitution. They may control the output of the individual members or the price of the products, or both, but there is normally no attempt to interfere with internal management or even with profits. Sometimes sales must be made through the medium of the company which forms the cartel. In practice, price and output are liable to be fixed to the advantage of the big and influential firms. The advantage of the cartel is that it creates a semi-monopoly and yet allows play to the initiative of the individual members. The institution has gradually developed on the Continent and is still commonest there, especially in Germany and Holland.

12. The American Trust is the last stage on the road to monopoly. In one of various ways, a number of powerful firms are brought under single control, each unit losing practically all independence. Examples are far commoner in the U S A. than elsewhere, but they occur in England; the tendency is seen in the case of bank and railway amalgamations. Such trusts may be the result of willing co-operation or of tyranny; sometimes firms band together to obtain economies, but oftener the stronger firms compel the weaker to come in through fear of continuance of cut-throat competition. The structure is variable; a true trust (now illegal in America) was managed completely by trustees who gave certificates to those who had given up their businesses to the oversight of the trust; each holder of a certificate obtained a proportion of the total earnings decided by the estimated value of the original business.

The American Holding Trust is still more effective, for it allows of a certain independence of the units, thus avoiding some of the dangers of company management; each firm keeps its formal independence, but all the units

are bought up by a new corporation specially promoted for this particular purpose. In England, "amalgamations" often attain the dimensions of trusts and their monopolistic tendency is equally marked, though the legal aspect presents points of difference; in industry, amalgamations are common in the dyeing and other sections of the chemical and allied trades. They are also of importance in some textile trades, *e.g.* sewing thread; they are very prominent in shipping.

There is a continuous chain from casual "understandings" and agreements through loosely knit and temporary "associations" to unified amalgamations. Such unions are not actually contrary to English law, but in so far as they are in "restraint of trade" they have no legal protection; the law mainly neglects their existence. In America, virile business men have utilised national resources and have sheltered behind tariffs so as to build up powerful combinations which have compelled legal action; on the other hand, German laws have encouraged association, so that cartels have full protection. International combinations are also known, *e.g.* in relation to tobacco.

13. We return to the theoretical study of monopoly irrespective of origin. In one way, the problem of value is simplified, for in effective monopoly there is no competition between producers; one side of the process of exchange can thus be considered as a whole. It may be said shortly that the aim of a monopolist (whom for convenience we shall suppose to be a single person) is to obtain the "maximum net revenue." For any given supply there will be definite expenses which may be balanced against the total receipts obtained; excess of receipts over expenditure is net revenue. For a public company, expenses will include normal interest on all money borrowed, and also salaries;

**Theory of
Monopoly.**

if salaries depend on the amount of work actually done, this fact must be allowed for. In a private business (using the term in the widest sense) the owner (or entrepreneur) will make an estimate of the payment due to management; in a company this difficulty will not occur, for paid officials will be appointed to manage the business, and the shareholders will reap the reward of simple possession.

The demand schedule is fixed in the ordinary way by marginal demand. The perfectly self-seeking monopolist will balance receipts against expenses at every point; his aim will be that quantity for which net revenue is greatest; the price will be fixed as the marginal demand price for that quantity. A pure monopolist has only a limited power, for he has no influence over demand, he may fix output at any reasonable amount he pleases, so that all is sold; again, he may fix price at any reasonable level; he cannot do both things at the same time. If he fixes output, it will be sold completely at a price not greater than marginal demand price; if he fixes price, his output is settled by the marginal buyer. Maximum net revenue will not occur when price is greatest or when sales are largest, but at a position between these two; nor will the output or the price normally be the same as it would under free competition.

14. Suppose a man finds on his land an unlimited supply of oil which has special properties and which can be collected without expense. Under free competition, the price would be zero, for, as the supply is unlimited, marginal demands can be satisfied down to zero. As it is, he may fix the price as high as any person will pay. The need of one man may be so urgent that he will pay £10 a gallon for a small quantity, and many will pay at this rate if they

**Maximum
Net Revenue.**

cannot obtain the oil otherwise and they require it in medicinal quantities; thus a small steady demand may exist at this price. Again, if the owner is philanthropic, and doles out the oil, a very large demand may exist, but sooner or later it will be satisfied. Neither of these conditions will correspond to a maximum of receipts; if the price is very high, the demand is very small, and *vice versa*; the greatest revenue will be received at some intermediate position. Consider an imaginary demand schedule.

PRICE PER GALLON.	NUMBER OF GALLONS SOLD.	TOTAL PRICE.
£800	A medicinal dose.	£2.
£100	1 gill.	£3 2s. 6d.
£10	1 gallon.	£10.
£1	20 gallons.	£20.
5s.	100 „	£25.
4s.	150 „	£30.
3s.	300 „	£45.
2s.	500 „	£50.
1s.	1000 „	£50.
6d.	1600 „	£40.
zero.	20000 „	zero.

It is supposed that the oil finds new uses as its price falls.

The price will be between one and two shillings, and the amount sold between 500 and 1,000 gallons; it seems probable that the total receipts will rise above £50 at some position between these two; within this region, neither the price nor the amount is separately a maximum, but their product is greatest. The position is obviously far removed from the competition equilibrium position, at which price is nothing.

This example leads on to actual conditions, where price is a complicating factor, and the following schedule will be easily followed. The gallon is again the unit.

PRICE PER GALL.	EXPENSES PER GALL.	SUPPLY.	RECEIPTS.	TOTAL EXPENSES.	NET REVENUE.
£10	1s.	1 gall.	£10	1s.	£9 19s.
£1	1s.	20 „	£20	£1	£19.
5s.	1s.	100 „	£25	£5	£20.
4s.	1s.	150 „	£30	£7 10s.	£22 10s.
3s.	1s. 3d.	300 „	£45	£18 15s.	£26 5s.
2s.	1s. 6d.	500 „	£50	£37 10s.	£12 10s.
1s.	1s. 9d.	1000 „	£50	£87 10s.	£37 10s. loss.

In this case, diminishing returns are in force, so that net revenue decreases owing to increased expenses per unit, as well as to lowering of marginal demand price. The most favourable price will be about 3s. and the quantity sold at that price is 300 gallons. The same principle will hold if the supply is taken as a rate instead of a stock.

15. This is not a likely price under free competition, for it does not represent an equilibrium position. Suppose ten producers supplied 30 gallons each; if they were not combined against the consumer one of them would be more than satisfied with the profit of 1s. 9d. per gallon, and would wish to produce more; he would not fear to spoil his market, for his own extra production would be small in comparison with the total product of his rivals; if a monopolist increases production by 10 per cent., i.e. from 300 to 330 gallons, price must fall, but a single producer increasing production by 10 per cent., i.e. from 30 to 33 gallons will hardly affect the market. Ten producers in combination would limit supply to 300 gallons, but when each acts alone, the most alert will extend supply; he knows that his individual gain will more than balance the loss consequent on the lowering of price due to increased supply. Put concretely, a man

Relation of
Monopoly
Price to
Competition
Price.

would rather clear 1s. 8d. per gallon on 40 gallons than 1s. 9d. per gallon on 30 gallons; all cannot make this extra gain; if they attempt it, the production will reach a total of four hundred gallons, and the net gain will drop to a little over a shilling per gallon.

Yet the others must follow suit; by a slight fall in individual supply price the first producer threatens to capture the market, and the others can still make a good profit at the lower price. The marginal seller forces the price down to equilibrium point. The tendency under monopoly is thus to sell a less quantity at a higher price than under free competition. This is normally true whether the commodity in question is produced under conditions of decreasing or increasing return.

16. It does not of necessity follow that unrestricted competition is advantageous to the consumer; it often supplies him with abnormally cheap goods, but this effect may be temporary. **Advantages of Monopoly.** The words trust and monopoly possess an unpleasant significance, but combinations are not altogether bad, and even from the moral standpoint are to be preferred to cut-throat competition. A monopolist can economise in ways which allow him to produce more cheaply than under competition; he obtains the usual large scale economies, and in addition can save money otherwise spent on wasteful, unproductive competition, especially advertisements. A monopolist can afford to give advertising its proper place, *i.e.* the imparting of information to consumers.

Again, the energy employed in competition would be better employed in increasing efficiency by improved methods, by inventions, and better organisation. Thus the supply schedule itself may differ under monopoly; it may, and often does happen, that the monopoly price which is high with respect to the better schedule is really

lower than the corresponding price under competition; if the monopolist can make goods cheaper in the absence of competition he can, if he chooses, make a higher profit on a lower selling price. If the cost under competition is 6d. per unit, and the selling price 8d., and if the monopoly cost is 5d. the monopolist can lower the price to $7\frac{1}{2}$ d. and make better profits.

Aims of Monopolists. 17. When a monopolist is selling at maximum net revenue price he will lose whether production is extended or contracted, for net revenue shrinks in each direction. He needs only a rough estimate of the most favourable price level, however, for the net revenue changes very slowly at the favourable position; theoretically, the position is fixed as the level at which a very small increase or decrease of receipts is exactly balanced by the corresponding change in cost. No monopolist can obtain such exactness permanently; some produce too much and others too little. In the former case, the increase in demand above the favourable amount does not counterbalance the fall in price, and in the latter, the rise in price does not balance the drop in demand. From the monopolist's standpoint, neither condition is satisfactory; from the social standpoint, the first condition is preferable, for the consumer obtains more goods at lower prices. A purely selfish monopolist will be indifferent as to whether he loses on a given net revenue by over- or by under-production; the consumer prefers the former to the production position which gives maximum net revenue, and prefers this to under-production.

Influence of Consumers. 18. Such dislocation is inevitable, but the monopolist tends to approach the price which is most favourable to him. In practice, large and permanent discrepancies may occur, for a monopolist rarely uses his full powers. In some cases a

producer will deliberately lower price to tempt new layers of demand; many seaside resorts have been developed by the introduction of cheap fares, the companies realising that a temporary loss will be followed by a greater gain. Some producers may regard the consumers' welfare as a determining factor, and such will push production beyond the (to them) favourable position towards (but not necessarily up to) the equilibrium position under free competition.

Self-interest is another factor; the monopolist may make a large gain at the expense of future custom; if he insists on diminished production he risks unpopularity at the least, and this is often an effective check; a railway may consider representations from prominent travellers on matters of convenience and comfort with favour. Thus consumers can often exert great influence, and in some cases the law can be invoked. There are also indirect checks from the side of the consumer or from other producers. Very few commodities are absolutely indispensable; most articles may be replaced by substitutes; during the war, many housewives who had formerly scorned margarine were glad to use it. High prices stimulate the search after substitutes, and if a monopolist is too greedy, he may find his market permanently lost through a new invention or through the use of an alternative commodity. The high price of petrol stimulated experiments on the use of benzene.

Again, the production of identical articles by rival producers is stimulated. When a company has obtained a trade monopoly as a result of cut-throat competition it automatically concentrates in itself the advantages of large scale production, but its prices may be far above those under free competition; it may then pay a small producer to make goods at perhaps much greater cost than the monopolist but at less than the market price. If this

small business develops, the monopolist must either absorb it, kill it by cut-throat competition (and then again raise prices), or else must bring down prices permanently. The monopolist will try to prevent the possibility of such competition by avoiding excessive prices.

19. Socially speaking, the theoretically best price may be taken to be that at which the sum of the **Social Welfare.** net revenue and the consumers' surplus is a maximum, assuming that the interests of producers and of consumers are equally important. A municipality which wished to run its trams in the best interests of all concerned would attempt, however unconsciously, to obtain this ideal price; in actual practice it is found that net revenue is a far easier amount to estimate than the consumers' surplus; the distant future may see a regime of State and municipal monopolies based on the ideal principle. Even to-day, a municipality may regard consumers' surplus to be so important that the price of services may be well below that under free competition.

For it does not necessarily follow that the competition equilibrium represents the condition most beneficial to the community as a whole. If two traders of equal means exchange stocks directly, the maximum satisfaction of each separately under the given conditions is represented by the equilibrium point; at any other position, each can obtain additional satisfaction by further exchange. If the commodities are produced according to decreasing returns the equilibrium position will be the one at which the sum of the two satisfactions taken together is also a maximum. The case may be quite otherwise; if the seller is rich and the buyer poor, and the conditions of exchange are altered so that the goods are sold below true equilibrium price, they may be exchanged to a greater amount if the seller voluntarily or compulsorily extends production. The mar-

ginal utility of money to the poor man is high, so that when he gains money (or goods valued in money) from the other, he obtains more satisfaction than the rich man loses; thus aggregate satisfaction is increased. If a rich manufacturer foregoes part of his profits and sells at a lower price to poor consumers the increase of consumers' surplus will be greater than the satisfaction lost by selling below equilibrium price.

This is merely a special case of the general principle that if inequalities of fortune are smoothed out, aggregate satisfaction tends to be increased, for diminishing utility acts markedly in relation to money. Inequalities may be inevitable, and may be necessary to extended production, but in themselves are an evil. If one man has £1,000 and another has £100 the poorer will probably obtain more satisfaction than the other loses if the amounts are equally shared. A more distinctive case is that of increasing return; if a manufacturer produces beyond equilibrium point, the supply must meet a lower marginal demand, but the supply price may also fall, though less rapidly than the demand price. There will be a large gain of consumers' surplus; there will be a loss of producers' surplus, but as large scale economies are available there will be a balance of good. The buyers, under equilibrium conditions, will gain by a lowering of price, and the producers will lose this amount, but there will be a saving in cost to set against this loss. It would pay a group of consumers to subscribe a small sum to tempt the producer to further production; they would be more than recompensed by the resulting lower prices, if the producer were satisfied with the same profit as before.

20. The monopolist may serve a useful purpose in promoting economies; in other ways he is a social enemy, for his aim is not to maximise total satisfaction, but to

limit consumers' surplus. Socially speaking, in relation to goods made under increasing return, the ideal position represents a supply greater than (and a price less than) the equilibrium under free competition, which again is more favourable than the position the monopolist strives to attain.

**Objections
to Monopoly.**

The monopolist may perform what is, on the whole, a further disservice by trying to suppress the action of the law of indifference on the demand side. A monopolist may try to capture each consumer's surplus individually; he can hardly do this in relation to successive amounts bought by the same man, except on rare occasions on which he has the buyer at a disadvantage, but he may often obtain a large part of the surplus of certain individuals. This is done by "discrimination" by which certain buyers are charged more than the marginal price. Income discrimination is common, *e.g.* by high-class florists; trade discrimination is especially common in America, where certain trades or firms obtain concessions on railways and elsewhere; local discrimination is found in relation to transport, and also exists on an international scale, a prominent example being "dumping," or the sale of goods at a lower price than at the place of origin.

Dumping usually, but not always, takes place in a foreign country, where the law of indifference is more easily evaded; it may be an advertisement of goods sold at little over prime cost, in the hope of creating a market; it may be a disposal of surplus stock, as in the case of book remainders which cannot easily be sold when the main supply is disposed of. It may also be a deliberate attempt to sell goods at different prices in different places. If a manufacturer extends production, he can sell the additional produce at prime cost and make an improved profit on his main stock in the old market; thus he may

sell off this extra stock in a foreign market at a low price and keep up the price to his present customers, while lowering his total costs.

21. English industry is in a transitional state. The era of unlimited competition has passed, assailed
Future of unlimited competition has passed, assailed
Development. on the one hand by a development of State intervention and control, and on the other, by the growth of great monopolies. Competition is giving place to combination. The hope of the future is that industrial monopoly will pass under State or municipal control or be replaced by voluntary combinations of consumers as is best in any particular case, so that the opposition between producer and consumer may be replaced by unity of interest. The question is one of practical expediency, and admits of no general solution; each case must be solved on its merits.

To-day (1923) there is a strong reaction against excessive State interference with industry. During the War, control was more essential than the efficient production of ordinary commodities, and thus administrators had little difficulty in obtaining temporary control of industry; control was very expensive, it interfered with normal production, and annoyed many influential business men. If State control is to be successful—and the extent of its sphere of usefulness is an open question—men must become more amenable than at present to bureaucratic discipline, and, on the other hand, there must appear a race of administrators who are at once able, well-trained, sympathetic, and human. The old type of bureaucracy may be highly efficient, but is not adapted to the work of guiding industry.

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BOOK IV.

CHAPTER XI.

DISTRIBUTION.—RENT OF LAND.

1. The National Dividend in any given year is the sum of all the different kinds of wealth produced by the agents of production in that year. This is divided among individuals as personal incomes; the miner, the manufacturer, or the statesman receives a money income which gives control over a certain share in the dividend. If all incomes were equal, the quotient obtained by dividing the dividend by the population would give the share of each person.

Incomes are not equal; the laws which govern income are so complicated that Economics does not attempt to solve the problem directly; it is easier to find the share allotted to the agents of production or, when dealing with a particular business, to the factors of production. A man's income may be derived from the payments he receives as ownership of more than one factor; he may receive interest on money invested in the bank, rent for agricultural land he owns, profits in a business or shop which he owns and manages, and perhaps wages for spare time work for an employer. Many incomes are thus composite, though others represent payment made to a person as owner or supplier of a single factor. When Economics has worked out an analysis on the basis of the reward to

factors of production, the more complicated problems of Distribution may be attempted.

2. Distribution is not carried out according to a concerted scheme; to a large extent it occurs naturally and automatically through the working of individual self-interest, though the State or private individuals may alter it to some extent. Value is the regulator. If each individual consumed the goods he produced, there would be no exchange, and thus no distribution, for each man's income would consist of those things he himself made or appropriated. In modern economy, the wealth which a man controls is measured by his money income, and this is determined by the goods and services he gives out in the particular period. The amount of money he receives for his output will be roughly equal to the exchange value of the output, and the amount of goods he receives for the money income is similarly determined by exchange value; the money serves merely as an intermediary; the essence of the question is the exchange of the goods which a man has produced and does not personally need for other goods he requires; in a state of barter, exchange value would still be the regulator. Thus the number and (objective social exchange) value of the goods a man obtains is determined by the number and value of the goods he produces, if adjustment is perfect.

3. Rent is the reward paid for the use of the direct gifts of nature; unless expressly stated, this use of the term and not the common use must be understood. The ground has been cleared in the chapter on Land. Economic rent is there shown to be the surplus product raised on a given tract, in relation to land which only just repays cultivation; it thus assumes the existence of land which pays no rent. Customary rent is

rarely a pure rent; economic forces work slowly in agriculture, and exchange value is not the only cause which controls customary rents, they may be affected by ignorance, by philanthropy, by inertia, or else long leases may prevent customary rents from following fluctuations in value. Again, farmers' rent usually includes a payment for capital in some form, or for supervision and advice given by the owner. These facts sufficiently explain the great divergence of actual from economic rents.

"Rent is that portion of the produce of the earth which is paid to the landlord for the use of the original and indestructible powers of the soil. It is often, however, confounded with the interest and profit of capital, and, in popular language, the term is applied to whatever is annually paid by a farmer to his landlord" (Ricardo).

From the standpoint of Economics, rent is usually treated broadly, as the reward to land as an agent, rather than to land as a factor in any individual business. The manufacturer uses land, but its cost is small compared with his total costs; to the farmer, the price of land is an important consideration. Thus the theory of rent is most usefully applied to agriculture, and it is widely applicable.

4. Rent is an economic abstraction, and the theory must be used with great caution when actual conditions are being studied. Ricardo's account possesses an air of certainty and finality which is misleading if the theoretical nature of his work is not continually kept in mind. The Ricardian theory does not, alone, give a complete explanation of actual customary rents; it provides a most valuable means of approach to a complex subject, as well as a model of reasoning which has been followed in other branches of Economics. With this caution, we may proceed to consider economic rent in further detail.

**Pure Rent an
Economic
Abstraction.**

5. Suppose a landlord owns much land of varying fertility, all of it situated to equal advantage.

Explanation of Pure Rent. Suppose a tenant *A* tills good land which produces 100 quarters of corn, while *B*, on a piece of poor land of equal area finds it only just worth while to apply the same amount of capital and labour, thus raising 20 quarters of corn. *B* would be as well off if he took over *A*'s land and paid 80 quarters for its use. Thus the landlord can force *A* to pay nearly 80 quarters as payment for the use of his land: if he refuses, he can dismiss him and allow *B* to farm the land; *B* will be prepared to pay this amount. If there are many farmers on the various tracts belonging to the landlord, those who till the fertile tracts can obtain no permanent advantage; farmers on poorer lands will offer to pay for the use of better land. If at any time one farmer is obtaining more net produce (after paying rent) than another farmer of equal ability applying the same amount of labour and capital, the landlord can squeeze more rent out of the first farmer, provided that the second is willing to continue working for his present net remuneration.

There will thus be a tendency to fix the rents of the various tracts at a level such that a farmer will obtain the same net remuneration on whichever land he works. If agricultural labour and capital were perfectly fluid, if self-interest were dominant, and if tenancy were terminable at will, actual rents would be fixed in this way; even as it is, actual rents tend, however roughly, to mirror the differences in fertility; a farmer will pay a high rent for good land as willingly as pay a high price for the best plough or the most highly-skilled labour.

6. If the Ricardian theory is to hold in its simple form, the term "fertility" must be used in a wide and rather vague sense; the question of situation has been already

discussed, but there are other complications. Farmers differ in ability and industry; further, their methods vary. A farmer who relied mainly on human labour would not place the same relative valuation on two farms as would another who made full use of labour-saving devices. Fertility also is relative to the crop desired; soil suitable for wheat growing might not possess the same superiority for fruit. This latter case will be developed below; the case of differing ability cannot be fully considered here. As a first approximation to the truth, the Ricardian theory is sufficient for present needs.

7. Ricardo's theory assumes that no-rent land exists, *i.e.* that some land will only just repay cultivation, leaving no surplus for the landlord; if the landlord demanded payment for it, the tenant would have to cease cultivation. It has been objected that no such land exists, and that no landlord would give the use of such land free of charge. The criticism has little weight. Much land, even in England, is at present pure waste, being employed for no purpose whatever, *e.g.* at the edges of railways, some land is cultivated, but is so infertile that the rent is nominal. Again, most large farms contain land which it would be inconvenient to separate from the holding; the tenant accepts it, but as it is useless, he will not rent the farm unless the remainder of the land is worth the whole (actual) rent to him; thus the bad patch may be considered as a no-rent land.

In order to calculate the rent on a given piece of land, it is not necessary actually to find the no-rent land; if the land in question has been cultivated up to the margin of cultivation, the marginal return will be the same as that on the no-rent land. Suppose a farmer obtains a return of 20 units of corn to a dose of capital and labour on a

bad tract, and that this just recompenses him; this will be the no-rent land. On better land, the return may be 100 units; 80 units of this (or more probably its money value) will be given up as rent, and it will pay the farmer to continue production, until the working of diminishing return has pulled down the marginal output to 20 units. The total expenses on a piece of land are found by multiplying the number of doses applied by the marginal return; as no rent is yielded at the margin, this return is the same as the expense of applying each dose; these expenses are presumed to include normal remuneration for the work of the farmer. The total receipts will be the sum of a number of gradually decreasing quantities (units of corn), ranging from 100 to 20. The excess of the receipts over the expenses gives the rent the landlord can demand; the farmer would still work the land to the same limit were this rent obtained, for he has shown himself willing to work for the remuneration he receives at the margin; if satisfied by the return to the last dose, he will, if necessary, work throughout at the same rate.

This may be summarised as follows.—

Return to dose on marginal land ..	20 units.
Return to marginal dose on good land ..	20 „
Return to given dose on good land...	100 „
Surplus obtained for given dose ...	80 „

It is supposed that only one dose is applied to the marginal land.

Taking a dose of capital and labour to include actual expenses, and also normal remuneration to the farmer, the table may be rewritten:—

Net return to dose on marginal land ...	0 units.
„ „ „ marginal dose on good land ..	0 „
„ „ „ given dose on good land ...	80 „
Surplus obtained for given dose	80 „

8. Economic rent is thus a differential quantity; it arises from the differences in fertility between one farm and another; if fertility does not vary, the difference between the rent of two farms is always the same, but the absolute rents may vary as the margin changes. Thus if marginal land begins to bear a rent of 10 units of corn, owing to the cultivation of inferior land, the rents of all land will be increased by 10 units. If all land were identical in quality and equally well-situated, economic rent would not exist as long as any land were uncultivated.

9. It is conceivable that all land should bear a rent, though this is not at present the case. If population grew so that every acre of the earth's surface were just forced into cultivation, the best lands would carry an enormous rent, and be so intensively cultivated that hardly another scrap of produce could be grown on them, very poor lands would bear some rent; the worst would still bear none. If population now grew further so that even the worst land must be cultivated intensively, the whole world would be tilled almost up to the limit of its capacity; the worst land would be eagerly demanded, and would fetch a scarcity price, just as does food to-day. The worst land would bear a rent.

Such a rent would be a scarcity rent; its existence would not affect the old differential rents; these would remain, but to them must be added the new scarcity rent. All land except the worst would bear a differential rent, which would be greatest for the best lands; all lands, including the worst would bear a scarcity rent which would be the same for all. The rent of a good land would not be the pure economic rent, but would contain a scarcity element. Agricultural prices would so rise that a farmer would

obtain a surplus on the worst land, and this he would have to give up, for some other farmer would be willing to accept the normal remuneration obtainable when the surplus had been paid out as rent; similarly, more doses would be applied to the better lands, till a new equality was obtained between the marginal returns to doses on the different lands; thus the new surplus would appear also on the better farms.

Such a full use of natural resources is fortunately not yet necessary, but scarcity rents do occur. For simplicity, corn has been assumed to be the standard crop, but the number of possible uses to which land may be put is very great; it cannot be said dogmatically that one land is more fertile than another, for fertility depends on the nature of the crop required; much excellent meadow and pasture is of little use for wheat growing. There may be no scarcity of land, but a very serious scarcity of wheat land. The Ricardian theory of differential economic rents holds just as well for wheat considered as a product requiring special conditions as it does for Ricardo's vaguer term of "corn."

10 Consider a village in which wheat is grown, as well as barley; some land will be suitable for wheat, and a farmer will pay a good rent for it, another field will be considered as just worth a lower rent. There will be a yet inferior field which the farmer would be willing to cultivate if he could obtain it rent free; he might offer a small rent. The landlord will refuse it except at a rent which would offer less than normal remuneration to the farmer. This seems to be in conflict with the Ricardian theory, for the field is the marginal wheat field, and should apparently bear no rent. The explanation is that another farmer will offer the rent required so as to use it for another purpose, *e.g.*

**Wheat
scarcity rent.**

barley growing. The wheat grower will seek a field for which the rent is not zero—this will be too much to expect—but so low that it will be profitable for him to grow wheat on it. He may choose a piece of pasture; he will have to pay as rent not less than the rent the land fetches for pasture. Wheat land is limited in supply, so that some land must be taken [from alternative uses. As regards wheat, the worst land has a scarcity value

Suppose a farmer is indifferent as to whether he applies one dose to such land when offered him free of charge, this would be the no-rent land, and the farmer would be obtaining normal remuneration from the marginal dose on his own tenancy. Suppose demand increases and wheat prices rise; it may now be just worth while to rent the poor land at the rent it fetches in its present use, and to apply one dose to it. The return to this dose must cover actual expenses, remuneration to the farmer, and also pasture rent. Now we supposed that the return to one dose on this land was the same as that to the marginal dose on the better land, and the physical productivity of the two fields will not be affected by the price of the product. Thus the marginal dose on the best land will also produce a greater value (though the same quantity) of produce than before; the price of the product will now cover expenses, normal remuneration to the farmer, and an amount per acre equal to the rent of the pasture per acre. If the farmer continues production on the old field, he will apply successive doses till the marginal return no longer includes any surplus; it is thus less in value than the marginal return immediately after the rise in prices by the pasture rent of the new land. Whether we take the former marginal return as standard, adding to it the pasture rent of the new land, or measure directly from the new marginal return, a new surplus appears on the old

land, equal in value (per acre) to the pasture rent of the new land. Thus the landlord will finally be able to obtain an extra surplus from the older land equal in value to the pasture rent on the land just worth cultivating for wheat.

This principle is of wide application. If for any crop an increased production requires the taking over of land from another use, the new rent of any land growing that crop will be found by adding to its differential rent that rent which the marginal land would obtain when put to the next best use. Suppose the rent of one wheat field is very small, and that of three others 20, 30, and 40; if now demand increases and another farmer will give a rent for barley growing of 5 for the worst field, the rents will be not less than 25, 35, and 45.

11. Ricardo propounded a doctrine on the influence of rent on the price of corn which appears paradoxical at first sight. “The value of corn is regulated by the quantity of labour bestowed on its production on that quality of land, or with that portion of capital, which pays no rent. Corn is not high because a rent is paid, but a rent is paid because corn is high; and it has been justly observed that no reduction would take place in the price of corn although landlords should forego the whole of their rent. . . . That corn which is produced by the greatest quantity of labour is the regulator of the price of corn; and rent does not and cannot enter in the least degree as a component part of its price.”

To a farmer this statement might appear absurd; his rent is a cost just as is labour or stock. It seems obvious that if his rent is reduced there will be an opportunity of cheapening agricultural produce, and that competition will bring down prices. This, however, would not occur;

**Differential
Rent does not
enter into
Price.**

if all rents were abolished, the farmer who worked on the poorest land would hardly be affected. Extent of demand, and therefore marginal demand would be unaffected; his product would still be necessary to satisfy such demand; he cannot afford to lower his prices, and he is able to sell his produce at the current prices, or he would not produce; other farmers may try to lower prices, but they cannot drag them permanently below his, for competition of buyers keeps them up to that point. He is working the marginal land because marginal demand is what it is. His land produces a bare living; other land produces a living, together with a surplus, but the owners sell at the price fixed by the occupier of the worst land, and the surplus is pocketed by landlord or farmer. Extent of demand necessitates the use of a certain low quality of land; the owner must pay his way, and the owners of other land are the more fortunate. The economic rent of a given field is fixed by the quality of the worst land in use for the same purpose, which in its turn depends on marginal demand, this on extent of demand, and this on price. Rent is a result of high prices; it has no effect on prices, at least of a direct nature. This principle holds not only for corn, but for all agricultural produce.

12. The above applies to pure, economic, differential rent. Scarcity rent does influence price. Under perfect competition the price is fixed as being not less than the expenses on the least favourable land, and these will include the rent obtainable for that land for the next most useful purpose; if pasture rent must be paid for this land, this will be an element in cost. In practice, this rent will be so small compared with the value of the produce that it may be neglected; the importance of scarcity rent lies in the fact that it is an effective factor in the cost of some

**Scarcity Rent
influences
Price.**

articles other than corn, which require land for their production. Such a demand for land may be for purposes other than tillage or pasture, *e.g.* for railways or business premises.

Scarcity rent may not be limited by the alternative rent, and may be far above it. Suppose a certain field is the only one available to a vine grower, and that this field is peculiarly favourable for wheat growing; the owner will refuse any offer less than the wheat rent, but if he realises the dependence of the buyer on that particular field he may be able to force the price far above this point. The field fetches a high price because it is scarce and in demand; the marginal demand is high; the case is similar to the high price of fish when fish is scarce. If the extent of demand is such that further cultivation is required and this is the marginal vineyard, the grower must include the scarcity rent (in this case even higher than the alternative rent) in his expenses, and the marginal price will be forced up.

Suppose now a projected railway requires this vineyard as a link, and that it is unaided and unhampered by the State; perhaps the use of this land will save the construction of an expensive tunnel or bridge. The railway will pay a rent (or more probably a purchase price equivalent to the rent) of an amount not less than the vineyard rent, but if the owner presses his advantage, he may obtain a rent or purchase price almost up to the cost of the tunnel or bridge. If the railway were repeatedly obliged to pay such inflated prices, the whole cost of construction would be very high, and the price of the product, *i.e.* the fares, be greater than they would be had the land been obtained at an agricultural rent; here, the differential agricultural rent is insignificant compared with the scarcity rent.

13. Scarcity rent is also important in the case of land used for business premises, but differential rent also appears. It has been shown that situation may be as important as simple fertility in respect to differential rents, and that the same laws of rent hold for situation as for fertility. In the case of business premises, situation is the most important direct factor, while fertility has an indirect influence. Consider a growing town; a business requires a little land for buildings, etc. This land, if cheapness is essential, must be agricultural or pastoral. A plot of land may have certain situational advantages, *e.g.* nearness to a station. If there is keen competition for it, the rent obtained will be much higher than it is for a plot which is just worth using, *i.e.* a differential rent will appear. When a number of premises are built there will be a marginal ground site, bearing no differential rent; it will, however, bear a scarcity rent, not less than the best rent otherwise obtainable. If there is abundant land of the kind required in the right situation, the marginal ground site may be obtained for a little over agricultural rent; if even the least favourable ground sites are small in number, a high scarcity rent will be exacted. Some firms obtain land very cheaply alongside railway main lines; the situation may be excellent, but there is so much agricultural land along main lines that the competition of landlords sends down the rent to the agricultural value. In a London suburb, however, there is little land available for agriculture, and what there is obtains a high situational differential rent: thus the marginal ground site obtains a high scarcity rent.

The rent of a ground site consists of two elements—the scarcity rent which the site pays because the marginal site pays it, and the differential rent, which is the surplus of

its rent over that of the marginal site. At the centre of a large town, the differential rent is relatively so great that even in London the scarcity rent is negligible in comparison. Site rent is a small matter compared with the total expenses of a large factory in the country; in the case of city offices it is an all-important factor.

14. This leads to an economical use of ground sites at the centre of large towns. A building is divided into offices or chambers which are extremely small; again, within limits, it is much more economical to build upwards on a given site than to spread outwards; the inconvenience and expense (*e g* lifts) of high buildings are less than the expense of a new ground site. This process reaches its culminating point in the New York skyscrapers.

Logically speaking, all rents should be reckoned from a site on the earth's surface which is no use for any purpose whatever; the notion of scarcity rent is one of convenience; the different uses of land grade continuously into each other, so that the position of the marginal site must be chosen arbitrarily. Thus we might consider Bond Street shop sites; there will be a shop which has the least favourable site in the street, and all the others will have a differential advantage over it. The number of such shops, however, is strictly limited, and thus the least valuable site obtains a very high scarcity rent. Thus we may look on the best site as possessing simply a differential rent, or a very high differential rent compared with the scarcity rent of the least valuable shop in London, or a low differential rent compared with the very high scarcity rent of the least valuable shop in Bond Street, etc.; the same actual rent may be split up into differential and scarcity rents in numberless ways.

Thus ground or site rent is influenced by the same causes

as the rent of land used for growing a special and rather valuable crop. Rent as applied to houses presents greater difficulties. Ground rent is an element in house rent, and so far the latter is ruled by principles formulated above. The ground rent and the payment for the use of the buildings erected on the site may be kept distinct; usually the site is bought outright by the owner of the buildings; he will pay a price to the landlord estimated as the capitalised ground rent, *i e.* a sum of money which is worth as much to the landlord as the sum of all the prospective ground rents.

15. The building rent is fixed in the same way as the price of a manufactured commodity, *e.g.* machinery, which is durable. The owner will require bank interest on the cost of the building; he will seek payment for risk—if he is a speculative builder he may mistake the demand, and may not be able to let the house; he will require payment for repairs and improvements, as well as compensation for gradual depreciation; in addition, he will require an extra payment as remuneration for his trouble and enterprise; were this not expected, he would not have built the house. If he sells the house outright, he will require a sum equal to the estimated capitalised value of the ground rent plus the building rent.

Once the house is built, however, the cost of building will have no direct influence on its rent; rents will be fixed by the relation of demand to existing supply except in those infrequent cases where a large number of houses are being built or destroyed. The supply of some articles, *e.g.* fish, is so capricious that the market is alternately flooded and emptied within a few days; houses are built slowly, and are durable, so that their supply cannot be suddenly increased; except in rare cases, *e.g.* the deliberate planning of a garden city, the number of new houses is

very small compared with the total number of satisfactory houses already in use. To a man in search of a house, the total actual rent is the determining factor, including both site and building rent; if all the houses are equally desirable, marginal utility will influence price as in the case of other commodities.

In practice, some houses will be especially desirable, and they will not necessarily be those which cost most to build; changes in fashion may alter relative values; an old hall or a new villa may obtain a high rent. The owner of such a desirable house is fortunate in the same way as is the landlord of good wheat land; the least desirable house will obtain a certain rent, as will the least desirable wheat field, by the action of demand and supply; marginal utility will still influence rent, but the successive units, *i.e.* the different houses, possess differing utilities when taken separately. Thus each of the other houses in the given area, say a village, possess the rent of the worst house together with a rent representing the excess rent of the house in question over that of the worst house; the house rents of all the other houses contain a differential element.

16. The difference lies in the fact that whereas the supply of land is practically fixed, and is a direct gift of Nature, that of houses can be increased slowly, as it is dependent on human production. A differential advantage obtained by an article over another article of the same kind, when supply can be increased (or decreased) slowly is called a Quasi-rent [Marshall].

17. The standard of reference is not invariable; it might conveniently be taken as the payment which will compensate for the total cost of production. Suppose a speculative builder builds a few villas in a village which contains a few men who have made money; they may be eagerly taken up, and

**Speculative
Building.**

will obtain much higher rents than the normal. Profits on the building of such houses will be abnormally high ; these new houses will obtain a differential advantage over those older ones which just pay for cost, while the worst houses would now be considered to bear a negative quasi-rent. If the builder, through labour troubles, through absence of other well-to-do people, or for some other reason hesitates to build more houses, the quasi-rent of the new houses may persist ; if, however, he or a rival tries to repeat the success, the marginal utility of the new villas will fall ; it may fall so much that the quasi-rent compared with houses which just repay construction will fall to zero , it may even become negative, though the quasi-rent compared with the worst house will remain positive. A quasi-rent can slowly disappear through further construction ; a negative quasi-rent would also disappear through destruction of the worst houses.

The importance of the notion of quasi-rent lies in the fact that it is found to emerge throughout economic experience ; the whole theory of distribution could be worked out from the notions of scarcity rent and differential rent, though it is often convenient to employ other methods. A manufacturer may obtain high profits by means of a patent or secret process, but if the patent lapses or the secret is discovered, the advantage disappears ; while it exists, it is a quasi-rent. A skilled cricketer, musician, or mechanic may possess a genius in certain directions which is the source of a quasi-rent, for the advantage will persist until successful rivals appear.

18. Quasi-rent is not a hard and fast conception ; from one standpoint a doctor's earnings may be normal profit, while from another they may contain quasi-rent. Time is the determining factor ; if a doctor is planning out his future, the chance of

**Quasi-rent
and Profits.**

great gain will be part of the attraction into the profession, and the supply of doctors will depend on such expectation; once decided, however, his income in any year will contain an element of quasi-rent; it is determined by conditions of demand for and supply of doctors; the supply of doctors can be changed only very slowly. For short periods, quasi-rent is obtained because extent of demand necessitates the employment of inferior doctors, and such quasi-rent does not affect the cost of attendance; for short periods, quasi-rent is an effect. For long periods, however, during which the supply of doctors may be sensibly changed, expectation of excess gains influences the supply of doctors and thus affects their future remuneration.

The existence of a quasi-rent would be very noticeable to-day¹ in respect to house property were Government control abolished. The depreciation of money and the stoppage of building during the war have greatly raised the marginal utility of houses, measured in money; the high cost of building has prevented the building of new houses since the war. There is a high quasi-rent with respect to the original cost of building, though it is not so certain that it exists with respect to present costs; the building of a moderately large number of new houses would so lower marginal utility that either building costs must fall or further building would cease.² Cost of building is in most cases a more important factor in total house rent than is site value, though the latter has some effect. In any town there are streets where building would occur if ground rents were lowered; cost of building is, however, the most important factor to-day in respect to new houses.

¹ 1921.

² A few more houses have been built, and cost of building has fallen to some extent; otherwise, the paragraph still holds good (1/23).

19. Actual farm rents consist of economic rent together with other elements already mentioned; the **Farm Rents.** rent for buildings is governed by the same causes as that of houses; the payment for use of stock, where such payment is customary, is dependent on the market value of the stock. It must always be remembered that custom plays a larger part in agriculture than in business; a customary rent may be very different from the rent which would have been reached by keen competition.

Economic analysis shows that rent is a real thing and must emerge wherever there is a limitation in supply of the best land, provided that price continues to be fixed by the play of supply and demand, and that the law of diminishing return continues to operate. We have regarded land broadly, as an agent of production; the primary economic problem has been solved. The human interest has only begun; the individual wishes to know what portion of this huge surplus will fall to him personally; assuming perfect competition and self-interest, the whole will be obtained by the landlord.

In actual practice, the landlord obtains a very large proportion. This fact has led to violent criticism of the whole system. Rent, as the critics point out, is largely, almost exclusively, a social product. Broadly speaking, it emerges as a result of the forcing into cultivation of inferior lands as population increases; the landlord has done nothing to earn this surplus, though his social usefulness in other directions may be very marked. The tenant may in favourable cases obtain some of the surplus, but in any case a large landowner in a country whose population is growing rapidly can obtain large rents as a result of increased difficulty of obtaining food. Ground rents are a still more glaring example, and huge fortunes have been

made by landlords who have simply held on to land which, through its favourable position in a large town, has immensely increased in value.

20. The existence of "unearned increment" is undoubted; the wisdom of attempts to allot it to its proper owners is not so apparent. Henry George and his followers have favoured the "single tax." They argue that as economic rent is a social phenomenon it should not be appropriated by individuals, but should pass into the hands of the State. Hence they advocate the taxation of land to such an extent that the surplus should be taken away, leaving only normal profits to the cultivator. They believe that such taxation is just, and that it would avoid the necessity of other forms of taxation.

**Unearned
Increment.**

There seems to be no serious injustice in deciding that any future appreciation in the value of property caused by social changes should benefit the whole population rather than the owner; there are, however, serious practical difficulties to be faced. The English landlord is not a sleeping partner; he may have spent much capital in improving his land, and it is impossible to discriminate exactly what proportion is unearned increment and what due to application of labour and capital. The tenant may also have improved the soil, and it seems fairer that the landlord should indemnify him at the expiration of the lease, and recoup himself by an increased rent than that the State should obtain the increase.

Again, if the State takes an increase in value imputed to social action, it seems only just that it should guarantee a landowner against a fall in rents due to a migration of population, or for similar reasons; property often falls in value because the district is no longer fashionable or because trade has moved to other towns; there is little

likelihood of any State thus guaranteeing rents except in abnormal times.

Further, it does not seem just to single out land rents as the one source of taxation; all values are affected by social occurrences, and the existence of an unearned surplus can be paralleled; thus a man may make abnormal profits or wages or interest because he is in an especially favourable position.

The single tax as such seems impracticable; even in the modified form of taxation of unearned increment it has proved very difficult to apply. The total value of the land of England is enormous compared with its value even a century ago, and most of the increase must be imputed to unearned increment; much of it has, however, been bought by its present owners at a price including the increment. In the Colonies, it might be justifiable to introduce legislation which in England would be merely confiscatory; increases in land values are certain to take place there in the future. In England it would seem best to subject obvious and glaring cases of unearned increment to special taxation; for the rest, increase in land values should be dispersed among as many small landowners as possible. When land is bought and sold in small quantities as easily and simply as other commodities, differential rent will no longer be concentrated in the hands of a few landowners who perform inadequate service for the rents they receive.

The cultivation of the land of England is mainly in the hands of farmers who expect and, on the whole, receive a normal profit which does not greatly vary from farm to farm; the remainder of the net excess of the value of profit over expenses tends to be absorbed by the landlord. The farmer's profit is a necessary element in cost; the landlord's differential rent is no such necessary element.

REFERENCE.—*Ricardo*. Principles.

CHAPTER XII.

DISTRIBUTION — WAGES.

1 The human labourer is a necessary aid to production ; it is largely for his benefit that production is carried out. As far as human labour can be considered a commodity, so far its price must be determined by the same means as that of material goods ; the labourer is human, and so on the other hand the theory of price which is sufficient for inert commodities must be supplemented before it can become a complete theory of wages.

**Human
Element in
Wages.**

In Economics there is a convenient distinction between wages and profits ; the former usually represents the price paid for the services rendered by the labourer to the entrepreneur ; profits are the reward of the latter. The distinction between wages and profits is not one of amount ; a highly paid manager is a labourer for the purposes of analysis ; a small shopkeeper with one or two assistants is an entrepreneur. The distinction between wages and profits is not rigid, but from the standpoint of analysis as of common life is one of great convenience.

Common thought is not yet emancipated from the atmosphere of the late eighteenth century, when cheap labour was the means by which a few manufacturers obtained large fortunes ; the condition of the labourers of that time was little removed from slavery. An unsym-

pathetic slave master (who need not be personally cruel) will treat his slaves as he would cattle or machines; he will spend just that amount on them which will keep them in a fit state to do efficient work; if small luxuries or amusements will lead to more productive work, they may be forthcoming. The comfort of the slaves will, however, not be studied for its own sake.

2. Such conditions must have often occurred among the slave gangs of Egypt or on the great Roman farms. An owner would need labour; the marginal worth of slaves would fall as his stock increased; he would buy slaves up to the point at which the estimated net product of an additional slave would just balance the purchase price. So far as the slave-owner had purely economic aims, and so far as competition between slave-owners was active, the process of slave buying would be similar to the purchase of a machine by a modern manufacturer.

On the other side, the slave breeder must sink much money in the growing slave; he would require for a slave boy a remuneration which would cover his expenses with an additional profit; the value of a slave would not in the long run be less than his cost of production, *i e.* the cost of rearing him. Thus the price paid for a slave was governed by two factors, his usefulness on the one hand and the cost of rearing him on the other.

In the France of the eighteenth century, the peasantry were in a condition hardly removed from slavery; they were worked hard for a bare living, and any surplus over necessities was taken for the State, privileged classes being exempt from taxation. If the people became more comfortable, the checks to population were removed, and increased numbers shared the former misery. Wages were just sufficient to keep in being a class of workers who were

used by the nobles just as were the Roman slaves by their owners; wages were kept down at subsistence level.

3. Thus the Physiocrats believed that there was a kind of law of wages, that if the peasantry obtained more than a bare living, the increase of population would again drag down the standard, even if the surplus were not taken by taxation. Ricardo saw intense misery in this country, but the condition of the population was not so hopeless as in France before the Revolution; he modified the conclusions of the Physiocrats. The German socialists mistakenly supposed that Ricardo gave his authority to a law of wages as hopeless as that of the Physiocrats; thus they formulated the iron law (Lassalle) or brazen law. They believed that under a capitalistic system, in which supply and demand were the factors which fixed prices, the capitalist and the landowner would be able to seize the whole of the product in excess of that required to keep the labourers on the verge of starvation.

These conclusions cannot justifiably be obtained from a study of Ricardo; he fully realised the possibility of an improvement in the lot of the labourer, and recognised the possibility of so distributing the surplus product obtained in a quickly progressing country that the lowest classes may obtain some share. He says:—"The natural price of labour . . . essentially depends on the habits and customs of the people. . . . Many of the conveniences now enjoyed in an English cottage would have been thought luxuries at an earlier period of our history." Again, he says, "The friends of humanity cannot but wish that in all countries the labouring classes should have a taste for comforts and enjoyments, and that they should be stimulated by all legal means in their exertions to procure them. There cannot be a better security against a superabundant

population. In those countries where the labouring classes have the fewest wants, and are contented with the cheapest food, the people are exposed to the greatest vicissitudes and miseries . . . they are already so low that they can fall no lower."

The iron law has been true throughout long periods, and even to-day it is essentially true over large parts of the earth, perhaps particularly in the thickly-populated agricultural countries of the East, especially in parts of India and China. In such countries, a powerful landlord is able to rack-rent his tenants; if there are serious obstacles to movement, competition between landlords is absent, and the state of the labourers may be worse than under the most pitiless competition. In such countries, population responds readily to changes in the level of wages.

4. The Physiocrats and the German socialists drew their conclusions from different types of economic organisation; to the French peasant, the enemy was the great landowner; to the socialist, he was the man who controlled capital. The experience of the last century has shown that the so-called iron "law" may be evaded in either an agriculturist or a capitalistic manufacturing community. Denmark, Holland, and, to a less extent England, have shown the possibility of raising the wages of agricultural labourers well above the mere subsistence point. In a developed manufacturing community, the case is yet clearer. The last century witnessed a great increase of wealth in this country; capital accumulated while personal expenditure transcended former levels. A large share of the increased wealth has undoubtedly been taken by owners of land and capital, but it is yet true that the working classes are to-day more prosperous than they have been for at least a century and a half, and

**Iron Law not
Universal.**

a labourer has certainly access to more material wealth than ever before. As a statement of fact, the iron law contains much truth; as a statement of an inevitable and eternal law it is disproved by common experience. There is no need for pessimism; the German socialists may be right or wrong in their attack on the capitalistic system, but the system as it stands provides opportunities of improvement to the poorest classes

5. The industrial progress made by England during the Napoleonic wars led men to realise the importance of capital in wealth production; hence there developed the idea that wages were limited by the amount of capital in use; its fuller development led to the Wages Fund Theory of J. S. Mill; he supposed that wages depended on the "proportion between population and capital."

A labourer often lives from day to day; if he is making cloth by the aid of machinery he will not wait till the cloth is completed and sold before receiving his wages; the entrepreneur provides the fixed capital required in the manufacture, and also gives to the labourer part of his stored up wealth, *i.e.* circulating capital, so that the labourer's wants may be satisfied while production is being carried on. Thus the wages are actually paid out of circulating capital owned or controlled by the entrepreneur. Hence it appeared to the older economists that wages were limited by the amount of capital which was at hand to pay them.

This theory involved no real contradiction to the subsistence theory, for it was often assumed that the total wages fund available for payment did not allow of the payment of much higher wages than were necessary for subsistence; it allowed of the hope that if ever capital increased much faster than population, wages might rise;

this was held to be unlikely by those who accepted the conclusions of Malthus.

The existence of a wages fund is highly problematical; it is true that at any time all wages have been paid from a fund in the hands of entrepreneurs, and that the value of the product has no direct influence on wages, but the theory suggests that the fund bears a nearly fixed proportion to total wealth, and this is highly improbable.

6. First, the payment of wages out of money controlled by the entrepreneur is an advance payment dictated by the necessity of the labourer; the true source of wages is not a fund but a flow of commodities, it happens that the goods for which a man receives payment may not be sold by his master till long after; none the less, the entrepreneur estimates the probable value of the finished goods, and the hope of future receipts determines the payment of money immediately in his possession. In the case of goods continuously produced under steady conditions there is no difficulty at all; the fund for payment of present wages is actually the money he is receiving for similar goods produced beforehand and now being sold. Here it is plain that the labourer is paid from the receipts from goods made by him. Under other conditions, the entrepreneur may mistake the amount he will later obtain for the goods being produced, and, if his mistakes are many and serious, he cannot continue business. The source of wages is thus in reality not an approximately fixed money sum, but a flow of goods which will become a money income.

Further, modern credit developments have made the application of capital to industry much easier than formerly. During times of good trade, employers try to tempt outside capital into business by offers of higher interest, and are willing to pay more for bank credits. Capital is very

**Wages an
advance
payment.**

mobile, and easily finds the most productive employment. When an employer wishes to take advantage of favourable trade conditions he will be more willing to pay high wages than at other times. The existence of a stock of money set aside for payment of wages seems contrary to experience.

7. The theory carries with it a peculiar conclusion; if the wages fund is fixed, and the supply of labour is doubled, it follows that if the theory is strictly true the average rate of wages is half its former rate. It is quite true that if capital and labour are present in the most favourable proportion, an increase of labour will obtain a less than proportionate advantage in that the proportion will be less favourable than before. Even so, if the amount of labour is doubled, the product will normally be greatly increased, though it will not be doubled; thus the employment of more labour will lead to an increase in the fund from which labour is paid; the number of sharers in the dividend is increased, but so also is the dividend.

These attempts to find a simple statement which should give a broad explanation of the level of wages gave place to a new theory which dealt with the question from the standpoint of the individual. A labourer receives wages because he helps to produce a commodity which has a money value; an employer thus is willing to pay for such service, and he is disposed to give the greater remuneration to the labourer who helps him to earn the more profits. This obvious fact led to the Productivity Theory of wages.

8. The classical economists developed the Cost theory of value, and later economists tried to show that the coincidence of exchange value and cost was secondary and that the essential determinant of value was marginal demand. Similarly,

**Dividend
depends on
number of
labourers.**

**The
Productivity
Theory.**

the older economists seized on the undoubted fact that wages tended to agree with the cost of rearing and training a family, but the later economists concentrated on the demand for labour. It is easy to show that the cost of rearing cannot in itself directly determine the wages to be paid; apprentices trained to follow a particular trade cannot thereby claim high wages if inventions have transformed their work so that specialised skill is rendered useless. A youth who has received a good school and college education cannot, merely because of his expensive training, claim a higher reward if forced into direct competition with other men. An employer pays, not according to training, but for results; however effective such training may be in raising wages, they are raised only if the training has rendered the labourer more useful to his particular employer. A keen business man expects the same type of results from employees that he does from expensive machines.

Every employer tries to limit the wages of a particular worker to the amount he is worth to him; if for any reason the wages are higher than the worker's "net product," sooner or later dismissal or a fall in wages must occur. If productivity is so obvious a controlling factor in individual remuneration, it must find a place in the general theory of wages.

9. The theory of distribution is peculiarly difficult in that it attempts to divide the national dividend among owners of factors when each factor is continually varying in amount. The theory of rent was artificially simplified by assuming the existence of a normal rate of profits for which tenants were willing to work the land. So, in discussing wages, it is advisable to consider rent and interest as constant and determinate factors, and then to discuss the distribution of the product unappropriated as rent and

Difficulty of
Theory of
Distribution.

interest between the labourer and the entrepreneur; if we know exactly what share is claimed by capitalist and landlord, the remaining task is simplified.

10. Consider an example in which rent and interest are absent. A fruiterer sends out boys to gather wild blackberries; if he obtains a considerable amount of fruit, he can obtain a good price in the town; each boy gathers, say, a hundred blackberries in an hour. Each boy brings a certain product, whose value can be estimated. The fruiterer would give more than ten times as much for a thousand blackberries as for a hundred, for they are just as easily marketed; he does not wish for many more, as he would have to make two journeys, or sell them locally at a low price. The value to him of the marginal product would increase up to the tenth boy (say), but after that would begin to decrease.

If the fruit were brought to the fruiterer unexpectedly, in bulk, he would buy it as a single commodity; probably, however, the rate of pay will be settled beforehand, say at sixpence for the hour; he will be able to hire the exact number of boys he wishes. The product of the first boy may be worth a shilling, when the net product will be sixpence; the product of the first ten boys may be worth fifteen shillings, when the total net product will be ten shillings. Obviously, the fruiterer will try to engage more boys at this rate (or persuade the others to work longer) till the net product is nothing, *i.e.* till the value of the actual product for each boy is sixpence for the hour.

In this case, it is nearly true to say that the marginal product is the number of blackberries obtained personally by the last boy engaged (we suppose that all the boys are equal in efficiency); it might be that an additional boy might help or hinder the others in their work; in this

case the true marginal product could be obtained only by subtracting the product of the original group from that of the new group including the additional marginal worker. In cases where the removal of a man disorganises production, this subtraction method is the only correct means by which marginal return may be estimated.

Suppose now that the number of boys is so limited and their dislike of work so pronounced that the employer can obtain only fifteen hours labour in all; the net marginal return has fallen, say, to ninepence per hour per boy. If now the boys have plenty of pocket money, and consider the fruiterer too grasping, they may be dissatisfied with the remuneration of sixpence per hour, and if there are housewives who will pay more than sixpence per hour, the price of their labour may be forced up. If competition is keen, the fruiterer may be obliged to pay the full ninepence per hour, assuming that this rate already includes satisfactory profit to himself. If, however, there is an abundance of boy labour, if the fruiterer meets no competition, and if pocket money is scarce, blackberries will be so abundant that the dealer cannot sell them all, and he may only offer a penny for an hour's work; even at this price, the boys may compete against each other; the dealer may make an immense profit on the bulk of his fruit, because there is such keen competition to sell him additional supplies at a penny; thus the dealer gets the whole of the fruit at this low price.

11. The wages of the boys tend to coincide with the marginal net product; if wages fall below this level, competition will force the dealer to raise wages, for a diminished profit is better than none; if wages seem abnormally high to the boys, their competition will bring them down; the same thing will happen in the

Coincidence of
Earnings with
Marginal net
Product.

unlikely case that wages rise above marginal return, or else the dealer must cease to employ them; unless for philanthropic reasons, the dealer will not consent to continue to buy an extra supply at a loss, even though making a high profit on the earlier supplies.

This illustration represents certain of the forces acting in everyday business. It is a simple illustration, because rent and interest are not concerned, because the boys are supposed to do the same work with equal efficiency, because the marginal product can be easily recognised and separated off, and because free competition has been assumed on one side and a practical absence of competition between rival dealers on the other. Yet, the same forces work in the most complicated business, though overlain by other phenomena.

12. The practical conclusions are that under perfect competition and free play of self-interest, wages cannot permanently be above net marginal product; that competition between producers will force them up to that level; and that there are other forces working through the demand and supply of labour and of commodities which tend to bring wages into consonance with certain normal demands on the part of labour, while retaining contact with marginal net product. These principles will now be further considered.

First consider the question purely from the standpoint of the employer, treating labour, though able to look after its own interests, as any other productive factor, *e.g.* machinery. Suppose in a given business that the amount of land, raw materials, fixed capital, etc., is constant, and that the rate of interest on capital and the rent of the land is fixed and known; this assumption is never true, but it is an invaluable help in solving this intricate problem.

Thus, just as normal profits were assumed in discussing rent, normal interest and normal rent will now be assumed; the existence of normal profits will also be assumed, but these will be supposed to be liable to variation in the individual business. Perfect competition and self-interest will be assumed for the present.

A Productive Group. 13. First we suppose a business carried out by men of equal efficiency doing identical work, but in which there are possibilities of organisation such that two hundred men will produce more or less than twice the product of one hundred, the gross marginal product cannot in this case be obtained by estimating it as the product actually made by the marginal worker. The whole will form a productive group under the control of an entrepreneur.

The case is similar to that of the fruiterer; normal rent, interest, and profits will correspond to the fruiterer's marketing expenses; the productive group of labourers corresponds to a single boy who can be worked for varying periods.

The entrepreneur may increase production by adding to the group or by working the men longer hours. The marginal product will depend not only on the physical product, but on its price. The entrepreneur will find that diminishing return will occur sooner or later with respect to value, first because internal economies may be no longer possible when the business has grown large, and the group may be more difficult to control; next, because there is a proportion between labour and capital which is the most favourable, and this will be passed if he employs too many men; lastly, because a large production may lead to marketing difficulties, and so to a fall in price per unit. Of course, the employer in practice would increase his capital as his labour bill increased, but an employer usually

finds it easier to obtain more labour than more capital ; in any case, the other causes will operate.

14. For a short period, the wage rate will be constant in normal circumstances. If the employer considers whether to take on another man, he will (or should) find the gross product ; from this he will subtract all expenses, including normal profits and wages ; this gives net product. He will now estimate the gross product which is made when a new man of standard efficiency is introduced, and subtract the same amount as before. The amount by which this difference is greater than the old total net product gives the net product at the margin. If he considers whether to dismiss a man, he will perform a similar operation, and thus find the net product attributable to the marginal worker actually employed ; in general, the net product of the last man actually employed will be nearly the same as that of the next man who would be employed. Either may be termed the net product at the margin. Strictly speaking, this should be calculated at the point at which capital and land are also pushed to their marginal uses, but this refinement does not affect our conclusions.

If the marginal net product is greater than the wages he is paying he will try to take on more hands of the same efficiency ; he would do this until the marginal net product fell to the level of the wage, thus obtaining a surplus on the earlier product obtained more easily. If the labour were difficult to obtain, however, he would try to retain his marginal surplus ; as we assume knowledge on the part of the labourers, they will try to obtain this producers' surplus ; as the employer does not wish to lose men, he may have to pay a wage to all of them equal to the full amount of the marginal net product.

If the marginal net product is less than the wage paid,

the employer will dismiss men, until the new net marginal product has risen to the level of the wage; otherwise part of his production would be carried on at a loss; alternatively, he would reduce the wage down to marginal net product. Thus, under any circumstances, with the given assumptions, wages will be coincident with marginal net product.

15. Now consider the labourers as human beings; they can attempt to control events, instead of being controlled by the semi-mechanical forces of demand and supply. The labourers will have a standard of living, based partly on their environment and bringing up, and partly on the expense required to fit them for the work in question. If the labourers consider their wages insufficient, they may try to obtain better pay from other employers or in other trades; if some are able to obtain better work, the marginal net product of the business will rise, and wages will improve. If there is no possibility of obtaining other suitable work, the same effect will result from the slow shrinkage of labour in the business; newcomers will not be attracted. Thus if in any particular business the wages are lower than are warranted by the conditions of work, the limitation of the supply of labour to that business will in time lead to higher wages. The influence of the standard of life on wages as a whole must be postponed; it is enough to note at present that wages are determined not only by demand for labour, roughly measured by marginal net product, but also by supply of labour, which is influenced by individual standards of comfort (p. 292).

16. Gang labour of an unskilled type roughly fulfils the above conditions. Here, however, foremen are necessary. A contractor considers that his group of labourers

will do more work if controlled by foremen; one foreman may obtain more extra work than five labourers would do, and a second, than two labourers; if foremen are as cheap as labourers, he will continue to employ foremen till the extra product obtained by the last foreman is equal to that directly produced by a labourer; under these circumstances, a foreman and labourer would obtain the same wage. In practice, suitable foremen are rare; if they were offered labourers' wages, some might wish to be foremen because they like power, but others would wish to relinquish responsibility and remain labourers. There will usually be a shortage of efficient foremen; the employer is not able to obtain so many foremen that the net marginal product is that of a labourer; competition among employers will thus make the wages of a foreman equal to his marginal net product, making them higher than those of a labourer.

Consider now a factory in which fancy textiles are woven. A designer will have no direct influence on the amount of output, but he may raise its value by far more than the value of the cloth woven by an extra weaver; even so, he will obtain no higher wages if designers are common, for the employer would obtain other designers till the marginal net product was the same as that of a weaver; good designers are, however, rare, and so can obtain higher wages. The dyer, the works chemist, the commercial traveller, and the paid manager himself would, under the given conditions, obtain a salary equal to the marginal net product for his class. The manager does vitally important work, and good managers are scarce; thus his salary is far higher than that of an ordinary weaver. On the other hand, an unskilled man may seek work; even if he is the only unskilled man in the factory,

his marginal net product may be below that of the weaver class; if many are competing for unskilled work, the wages must fall to the net product to a point lower than a weaver's wage.

17. The case of differences in efficiency must now be considered, so far all the members of each class have been assumed of equal efficiency. Suppose a number of bricklayers working under a contractor at a standard rate of wages, and that the average worker is paid for his exact net product. The best workers are being paid less than the net value of their product; they may threaten to leave, and if so, the master will be willing to pay them a wage as high as their net product; thus they will obtain higher wages than the average. The worst workers are paid more than their net product, and are thus a source of loss to the master (it must be remembered, however, that in practice the employer may be willing to work for a time at a loss if the product covers prime costs), the master can then offer to these men the alternative of lower wages or dismissal.

Thus within each class of workers there will be differential earnings. The standard may be that of the worst labourer engaged; each of the others have a differential advantage in production, for which they receive a differential payment; this is a kind of rent, and is often called the Personal Rent of the individual in question. When considering the class as a whole, it is better to take the average wage as a standard, and to regard it as the normal wage of the class in question; the wages of the best men will be above this, and *vice versa*.

So far an individual business has been considered; now suppose that different businesses vary in their wage rates; if one firm offers abnormally high wages to labourers,

there will be an inflow of labourers from other firms ; the marginal net product in the firm in question will fall, sooner or later, and that in the other firms will rise. Thus the wages in the favoured firm will fall and those in the others will rise ; this will occur as long as there is any difference in remuneration between different firms for identical work. (N.B.—It is assumed for the present that the level of wages is the sole factor which influences movement.) Thus, as we have shown that in any one particular firm the wage coincides with the net marginal product, whatever the conditions of demand and supply, it follows that all labourers throughout the country obtain wages fixed on this principle

This will also hold for any other large class of workers ; the wages of equally efficient weavers, draughtsmen, or managers will be equalised in different firms ; it has been shown that in any particular firm the wage or salary coincides with net product ; it thus follows that the wages of the normally efficient member of any class of workers coincides with his net product ; therefore the wage of any worker is influenced by the same causes.

18. Thus there are two main types of competition ; first, there is that between men doing similar or related work ; this equalises the wages of equally efficient workers, and also arranges the men of differing efficiency in the order of their efficiency. Next, there is the indirect competition between men doing unrelated work ; even though not a single man of one class could do the work of a single man of another class, *i.e.* if the law of substitution between trade and trade were inoperative, this competition would still exist. The employer may be in doubt as to whether to employ an extra mechanic or an extra weaver, though their work is different ; competition between trade and

**Direct and
Indirect
Competition.**

trade is real, though indirect. The keenest competition will not equalise wages, for the class whose members are relatively scarcest or, more strictly, whose marginal net product is highest, will obtain the highest wages.

Considering the problem broadly, it follows that in the country as a whole, normal wages in the same trade are equalised; between one occupation and another, that class of workers which is fully occupied and whose further services are eagerly demanded will obtain high wages throughout the country; competition between one firm and another will not remove the inequality between occupational wages. Diamonds obtain a high price because the least use to which they are put gives a high satisfaction; good managers obtain good wages for a similar reason.

19. The above is the pure theory of wages for short periods. It is unlikely that real wage inequalities will persist indefinitely. Some men obtain high wages because of natural abilities; these are personal rents; it is not probable that in any large class the superiority can be explained wholly by personal advantages. A class may obtain a superior wage because it is able to take advantage of temporary good fortune, *e.g.* that of millowners who could turn to munition-making with little trouble; often also a class can obtain a higher wage because the trade is learned only with difficulty; labour at large may fully realise that one class is receiving abnormally high wages, but a considerable time may elapse before the influx of new labour drags down the wages to the normal level. Thus if the "cost of production" of a doctor is high, he may obtain a remuneration which will more than compensate him for initial expense of training; there may be a new demand for doctors, and the profession cannot be quickly recruited from external sources. In time, wages in a particular occupation will

Long Period
Changes.

alter (always in consonance with marginal net demand) so that they bear a relation to the cost of training. In the long run, the remuneration of a normal doctor of average intelligence will oscillate about a level which will just compensate him for his expenses of training and for the postponement of his earnings. The principle is the same as that in the case of commodity prices; the price of cotton under perfect competition is always its marginal utility; this price, however, stimulates or depresses production; a new marginal utility determines the new market price; these changes continue until the price fixed by marginal utility is coincident with cost of production.

20. The influence of a standard of living may now be considered. Suppose that the working classes in general find that their wages no longer allow them to obtain their old standard; they cannot change their occupations, because all wages have relatively fallen; they cannot enter the professions because they are not trained. If competition is perfect, they cannot obtain more wages by lowering profits. Yet it is widely believed that the working classes can obtain higher wages by insisting on a higher standard of living; such was the belief of Ricardo.

If this is possible, the relation must be indirect; as in the case of expenses of training to a particular trade, the relation of wage to standard of living must be the same as that of marginal utility to cost of production. The coincidence must be effected through changes in population. If working class wages fall, the labourers may insist on retaining the old standard of living; this may be done if the married men limit their families and the younger men postpone marriage. A double object will be served; the standard of the men immediately concerned will be retained; again, the slow diminution of the working class

population relatively to that of the employing classes will cause a keener demand for labour. An employer can obtain fewer men; the net marginal product must increase, and the final result will be a rise in wages which might lead to a standard of living higher than it was originally.

These effects may not be noticeable till a whole generation has passed, but there is little doubt that the population factor is one of great importance. There is a tendency at the present day among the working classes to expect a higher standard of living for their children than they themselves have obtained; limitation of families is a very marked phenomenon in most West European countries.

The productivity theory of wages undoubtedly explains a large number of essential facts which are left untouched by earlier theories. It has the further merit of explaining the facts on which the iron law and the wages fund theory are built.

21. Suppose that population increases up to the subsistence limit; this supposition is nearly true under certain circumstances. If wages are higher than the normal, population will increase, and employers will obtain abundant and "cheap" labour. Labour will be pushed into uses which obtain a very low production, and there will be competition for employment at these levels. The marginal net utility will be low.

Relation of
Productivity
Theory to
Iron Law.

There is an essential truth latent in the wages fund theory; it is that labour will gain by the extended use of capital in conjunction with it. If in a certain business, capital is employed so that the amount of labour employed is proportionately too low, a wise employer would obtain more labour. The marginal net return of labour is greater than that of capital; thus the owner of capital will obtain a less proportion of the amount available for distribution.

and the labourers a greater. If the total amount of capital in the country increases, while the amount of labour is constant, wages will rise throughout the country. If labour increases faster than capital, the marginal net product of capital will rise relatively to that of labour, and so far wages will fall.

2. This cannot be a complete theory of wages, because it assumes the existence of a definite normal rate of interest and of normal rent. The Theory is still incomplete. rent and interest are themselves subject to changes of a similar nature to wage changes. The problem is that of the distribution of a variable amount among owners of factors whose shares are continually altering in respect to one another. A broad view of distribution must be considered when the individual peculiarities of rent, wages, interest, and profits have been studied.

The productivity theory may be crudely and inaccurately represented by the statement that every man gets what he is worth. The popular form of the productivity theory is so obviously untrue, when taken literally, that the pure theory itself must be viewed with suspicion. Many men do not get what they are worth because they are not doing the particular work which would entitle them to better wages; others do not obtain the wages to which their work entitles them because their employer obtains more profits than he is entitled to in pure theory.

The pure theory supposes the existence of complete self-interest and free competition; in theory, employers fully understand the capabilities of all their men, and will extract the last ounce of work out of them, dismissing them if necessary without scruple; he is bound only by conditions of supply and demand; he experiences no difficulty in applying more or less of the factors of pro-

duction at short notice; he never concludes agreements with other employers or with his men. The labourer has no regard for his master's interests, though he is acquainted with his financial arrangements; for the sake of a small difference in wage he will move at a moment's notice from Penzance to Wick, or to Australia, or will supplant a less efficient man; he can quickly turn his hand to a new trade; every man's product is paid for with accuracy according to a smoothly-working scale.

Under such conditions the productivity theory might be accurately true. In some forms of business where competition is abnormally keen it is almost true. In ordinary business, however, there is at most a tendency towards the equivalence of wage levels and marginal net product. The law is operative, but custom and inertia prevent the quick adjustments which would make its effects obvious; wages slowly tend to reach the theoretical level, but an equilibrium is never permanently reached.

23. The forces which interfere with free competition may be grouped as "economic friction." The first example is the immobility of labour and capital which rules everywhere except under certain conditions, *e.g.* on money markets in a modern progressive country. Even a young unmarried man hesitates to leave his home unless his prospects are greatly improved; large increases in wages may fail to tempt married men to move to another place; thus it follows that the normal wages in one part of England may be much higher than in another part. This tendency is, however, often offset by the fact that a relatively small migration may suffice to equalise wages. If an abnormally pure ironstone were found in Kent, wages there would at first be very high; it would not be necessary for all the ironworkers to move here, for if a few came, the marginal

**Economic
Friction.**

net product would fall in Kent and rise in the older producing districts; thus equality of wages might be obtained with little difficulty. None the less, the equalising effects of competition are often seriously hindered by the lack of mobility from place to place.

24. Immobility between productive classes is yet more serious. Cairnes tried to avoid the difficulty by introducing the conception of “non-competing groups”; he supposed that producers could be divided into groups, the members of which competed among themselves, while the members of one group hardly competed with those of another. There is much truth in this; unskilled men find it almost impossible to become skilled labourers, and it is much more difficult for the son of an unskilled labourer to become an artisan than it is for the son of a skilled worker. There is a similar gap between the skilled worker and the professional man, and between him and the entrepreneur. The classes are, however, not so definite as is sometimes supposed; it is perhaps just as difficult for an unskilled labourer to become an entrepreneur to-day as it was fifty years ago, but it is easier to make a small ascent up the social ladder. The distance between class and class is still large, but the stages are smaller and more numerous. Universal education has increased the mobility between one class and that immediately above or below it.

Even an energetic and intelligent labourer finds difficulty in becoming a skilled worker; a child becomes accustomed to the atmosphere of the class in which he is reared, and unless consciously trained to direct his intelligence will find great difficulty in adapting himself to new conditions. So also the child of the artisan finds the employing or the professional status equally difficult of attainment.

**Custom
Standard
Rates.** 25. Custom is not so important a barrier to free competition as it was in former times or is to-day in less civilised countries. It is a more important factor in the professions than in manufacture; lawyers' fees are examples of customary charges. Even where the price of labour is settled by custom or law, competition is partly though not fully operative; extent of demand is fixed by price; thus lawyers compete among themselves for the legal work required at the standard prices; such competition depends on differences in efficiency and not on price cutting (so far as standard rates are operative).

Standard rates are also operative in industry, to some extent. A master cannot attempt to estimate exactly the marginal net product of a single manager, and the manager himself cannot estimate his own worth more accurately. Such a salary as £1,000 a year is obviously an approximation; the employer can afford to pay a single manager considerably more than he need, but ordinary wages must be calculated more accurately. Even the ordinary workmen are not paid exactly according to output; it is much easier to pay a standard wage than one which accurately reflects differences in the amount produced.

It is impossible that a human being should manage his business with the minute accuracy that pure theory demands. The most careful employer must make rough adjustments; neither he nor his workmen have the detailed knowledge which can most efficiently adapt means to an end; the men cannot properly realise the master's financial arrangements, while the master cannot be fully conversant with changes in the labour market; he may even make grave mistakes in relation to the commodity markets which immediately concern him.

No employer is thus able to say exactly what man shall be dismissed or employed; the foreman responsible for these matters must make his own rough adjustments, and his personal feelings will have some weight. The master, again, will normally behave with more consideration than strictly economic considerations would demand; men are often retained in slack times through motives which are partly philanthropic.

An employer could not make accurate adjustments if he chose; in practice, the arrangement and use of factors of production is more clumsy even than it need be. Both employer and labourer often lack mental energy and foresight; this leads to unsatisfactory results, and there may be culpable waste of resources.

A more subtle limitation of the productivity theory follows from the fact that the law of diminishing utility does not work continuously when the successive units are large; if there are three under-managers who are just worth their salary, the business will have to develop greatly before a fourth will be appointed; the adjustment can be made far more exactly in the case of a large number of weavers employed at a small wage.

26. Lastly, the keen competition which was so marked in nineteenth-century England, especially as regards production on a large scale, is giving place to combination; competition is becoming less individual. Masters took the lead by combining in small groups and making agreements for their mutual benefit. The working classes had gained by the competition of employers; they now seemed likely to lose this advantage and so tried to meet the danger by combinations of their own, which have now become powerful trade unions. To some extent, trade unions tend to remove economic friction; in other ways, they intensify it.

**Tendency to
Combination.**

27. The appeal to experience shows that the productivity theory is not exactly true ; it also shows that it is most nearly true in those cases where economic friction is least effective. The study of wages is attended with difficulty, and caution is needed when the results are being interpreted.

Actual Wages.
Methods of Payment.

The method of payment is a source of difficulty. Salaries present no difficulty, though unemployment must be allowed for. Ordinary wages are usually either time wages or piece-work wages. A time worker is paid a definite sum per hour or per day ; in theory, the wage is independent of the work done ; in practice, the master will not permanently employ a man who cannot do a satisfactory amount in a given time, while the worker may not put forth his best efforts if his wage is fixed. Time work is especially useful when the work is difficult to inspect and the output not easily measured, when work needs great care and individuality, or when delicate machinery must be used, and also when intervals of temporary idleness must necessarily occur, as in repair work and in work which is more than ordinarily difficult.

Piece-work is used in cases where the employer desires a large output, especially in cases where the work is straightforward. The employer usually safeguards himself against bad work by limiting the amount which can be earned. The standard rate is fixed by reference to the amount which an average workman can earn ; thus the more industrious and efficient do more than the standard amount, and receive better wages. When the standard is the amount of work done in a given time, piece-work becomes task work.

These methods of payment may be combined ; thus there may be a minimum time wage supplemented by a piece

wage. Collective wages are sometimes found ; a premium may be paid to a group of workmen in a factory, depending on the output of the group, and the members distribute the premium according to mutual arrangement. There are numerous variations and combinations of the above plans. In addition, profit-sharing may exist, when each workman obtains a small proportion of the final profits.

28. Wages investigators must take account of these methods of payment, as well as of fluctuations of employment and even unemployment. When the actual total wages received, however, are known, other difficulties appear. Some wages appear abnormally high or low, but on investigation it is found that their net worth to the workman is normal. Adam Smith may be quoted here.

“The five following are the principal circumstances which . . . make up for a small pecuniary gain in some employments and counterbalance a great one in others. First, the agreeableness or disagreeableness of the employments themselves ; secondly, the easiness and cheapness, or the difficulty and expense of learning them ; thirdly, the constancy or inconstancy of employment in them ; fourthly, the small or great trust which must be reposed in those who exercise them ; and fifthly, the probability or improbability of success in them. First . . . a journeyman tailor earns less than a journeyman weaver. His work is much easier. . . . Secondly, . . . the pecuniary recompense of painters and sculptors, of lawyers and physicians, ought to be . . . liberal ; and it is so accordingly. . . . Thirdly, . . . where common labourers earn four or five shillings a week, masons and bricklayers frequently earn seven and eight. . . . Fourthly, . . . the wages of goldsmiths and jewellers are everywhere superior to those of many other workmen.

**Wage
Variations.**

Fifthly, . . . success is very uncertain in the liberal professions. . . . The counsellor at law, who, perhaps, at near forty years of age, begins to make something by his profession, ought to receive the retribution, not only of his own so tedious and expensive education, but of that of more than twenty others, who are never likely to make anything by it." Smith goes on to point out that the high earnings of successful professional men are really less than they ought to be, because failures are so common; he shows that men are attracted into professions, in spite of the risk of failure, "by the desire of the reputation which attends upon superior excellence in any one of them," and by "the natural confidence which every man has, more or less, not only in his own abilities, but in his own good fortune."

Many men, however, perhaps most men, would prefer a small steady income to a fluctuating one or to a doubtful one, even if the total earnings throughout a long period were the same; to many men, uncertainty is an evil in itself; they would rather earn a steady £5 a week than a fluctuating wage which would be likely to average out to the same amount.

Disagreeable work is in some cases carried out for a very low wage, if it can be done by the least efficient labourers. Such work is limited in amount, and there is much competition for it among those who can do it; thus the wage is low.

29. All these factors, and others, must be considered

**Real and
Nominal
Wages.**

when real wages are calculated, and the productivity theory, if true, must refer to real wages, or net advantages. The nominal wage of workmen rose steadily after 1914; the actual amount of money received increased, but the number of commodities which could be bought by the

apparent wages probably fell. For past times, real wages have often been calculated by the amount of wheat or other commodity or combination of commodities which could be bought by the nominal wages; for the same reason, when comparing one trade with another at the present time, the term "net advantages" is preferable as it suggests a more inclusive meaning.

Other elements in net advantages are, first, the presence of payments in kind; this method of remuneration is dying out, but is still found in cases where earnings include food or clothing; this "truck system" may develop into the "living in" of some large establishments. Miners obtain cheap coal, and railwaymen cheap travel. On the other hand, some occupations necessitate expenses; the bank clerk must dress better than an artisan who may obtain a better wage; the city worker must pay for the cost of daily travel from the suburbs. The plumber must have his tools, and the lawyer his books, his offices, and his clerks. The shopkeeper must pay his rent out of his profits.

Again, a man will often follow an easy occupation at a low wage because it gives him opportunities for study, for following a favourite hobby, or earning money in his spare time by work which offers a change of occupation. Thus the clerk may cultivate an allotment, the mechanic may essay photography or the artisan's wife may keep a small shop.

Lastly, there is the question of nervous strain and of wear and tear. An employer may put aside a depreciation fund to replace his machinery as it wears out; he has no personal interest in keeping his workmen in good health as long as he can obtain others to replace them when they break down. Little more than a century ago, employers obtained workhouse children, and sometimes literally

worked them to death, sure of obtaining another supply. Those evil days have passed, but the workman's health is yet his own concern; though he ruin his health in service of his firm, he has no economic (as distinguished from humanitarian) claim on his employers. Justice dictates that the wages of such a workman should contain an element to compensate him for his diminished efficiency or ruin of his health. Trades which are recognised as being unhealthy may be well-paid, but in normal trades, the wear and tear of the workman's body in the service of his employer is too little regarded.

**Tendency of
Efficiency
Earnings to
Equality.** 30. In a given firm, the rates of pay for two similar pieces of work may differ; if two workmen are of equal ability, and one is working on an inferior machine, equal rates of pay would be unfair; in such cases, an attempt is usually made to equalise wages by giving a better piece rate to the man on the inferior machine. The rates of pay per unit of product will differ, but it is arranged that the man who is obliged to obtain the least product gets the best rate; it is then said that efficiency earnings are the same. Two men of equal efficiency obtain the same efficiency wages, and thus the same actual total money wages. One man may weave eight yards at ten pence a yard while another weaves ten yards at eight pence a yard, in the same time; their earnings will be equal; if the rates are exactly apportioned to relative difficulty, the efficiency earnings will also be equal.

The productivity theory would not lead to the conclusion that real wages were constant within a trade or that net advantages are the same from trade to trade, for it recognises that some forms of labour are relatively scarce, and that a new supply of labour may have to wait on the training of a new generation. It would follow, however,

that efficiency earnings must be equal throughout the region within which free competition is operative.

31. Investigations amply support the productivity theory. Where there is a difference between the money wages in two trades between which there is no obstacle to movement of labour, it will be found that the net advantages are nearly equal. Where the net advantages in a trade are considerably above the normal, it is usually found that the reason is found in the scarcity of the labour required; the workmen in it possess specialised skill, and they are more than usually efficient in respect to the work in question; where such an explanation cannot hold, there is sure to be some obstacle to free competition. Shortly, it may be said that efficiency earnings tend to equality. The keener competition becomes, the more certainly will wages diverge from each other, net advantages will be more accurately proportional to efficiency. The statement that every man gets what he is worth is true if regarded as a tendency, and if it receives no moral application; a manager is worth more than a labourer, not necessarily because he is of more real value to the community, but because there are relatively few men who can do the important work he is required to perform. If managers were common, and strong labourers were scarce and greatly in demand, the positions would be reversed.

The supply of skilled labourers responds slowly to demand; employers may be crying out for works chemists, and will have to give high wages to those they possess, if there is a greatly increased demand for them, a few will be attracted from the professions, but newly-trained men must form the chief source of supply. Parents will then think it worth while to give an intelligent son a long training; when the choice is made, the boy may find it

difficult to take up another occupation. Thus at the end of a few years the youth will probably find that the market for chemists is overstocked by those who, like himself were attracted by a former scarcity. The earnings of chemists may now fall below the normal pay expected by a highly-trained man. Similarly, abnormally low wages in a profession may lead to an avoidance of that calling; a scarcity may follow in a few years, and earnings will rise. Thus, there is never absolute stability of real wages; as education develops, however, these periods of lag will be shortened, as mobility increases, the transfer of labour required to restore equilibrium will be brought about more quickly.

Industrial Strife. 32. Actual wages are reached through struggle between employer and employed. To some extent, the owners of all the factors of production have a common interest in increased production; if the product to be divided is greater, each participant may expect a greater share. The actual proportion in which a given amount is distributed is not decided so easily as theory would suggest. Each person tries to take advantage of prevailing conditions to raise his earnings; sometimes he tries to stimulate competition, but often he realises that economic friction will prevent the action of tendencies unfavourable to him.

The ease with which employers combine was noticed by Adam Smith. "Masters are always and everywhere in a sort of tacit, but constant and uniform, combination, not to raise the wages of labour above their actual rate." To-day, the trade unions are equally effective. The last resort of the trade union is the strike; that of the employer is the lock-out. Moral considerations cannot be fully discussed here; workmen claim the "right to strike," but this question involves great difficulties. In the early days

of unionism, the law definitely sided with the employers against the men, but the balance has been redressed. To-day it is realised that the objection to strikes is moral rather than legal; the economic activities of individuals affect the happiness of the community as a whole; a strike may cause widespread misery far beyond the bounds of those immediately concerned.

The early trade unions were attacked as being in "restraint of trade," and were criticised by many economists as interfering with the free play of supply and demand. In fact, the unions were necessary because employers' combinations had first interfered with such freedom, and the workmen attempted to obtain the wages which would have been paid under free competition. A strike, or the threat of one may hasten the payment of wages to which men are entitled, and which they would obtain in time. When general prices are rising, manufacturers often make big profits; in these circumstances unionism may often obtain immediate payment of better wages. When there is a temporary increase of profits, the employer tries to keep the whole, and may do so if economic friction is strong enough. Strikes may overcome such friction.

Such friction exists in times of stationary prices. For long periods an employer may pay wages below the marginal net product; if competition worked unchecked, these wages would be raised. If a strike takes place, the employer may be obliged to forego his unfair profits.

33. Strikes are widely supposed to be the means of obtaining far higher wages than would be obtained under free competition. Thornton drew from his conclusion that "labour will not keep," the result that labour for that reason suffers a disadvantage in bargaining. An employer is usually rich enough to bear a spell of idleness, if necessary, or at least a period

during which production covers no more than prime costs. The reserve of a workman is normally small; he dare not withhold his labour. If labourers are banded together in a strong union, they can bear a spell of idleness as well as the master.

It seems, however, that the efficacy of strikes has been greatly overrated. Apart from the direct loss occasioned through stoppage of production, a rise of wages which is actually extorted may have been inevitable when competition had slowly done its work. The "keeping" of labour cannot seriously affect the demand for it; hardware may be kept indefinitely, but if all salesmen agreed to hold back hardware for a price above the competition price, the pressure of new supplies would force down the price; if new supplies could be held back, and a temporary excess profit were made, through the fact that a few buyers would give very high prices, the extraordinary demand would soon be satisfied; a little gain would have been made at great cost.

A powerful union might raise wages greatly above the competition level, but the results would probably be disastrous. An employer might have the alternative of shutting down or of working at small profit; he might work for a time so as to cover prime costs, but if his profit is permanently less than total costs, he will cease production.

Under certain special circumstances, a small group of men may permanently obtain a higher wage than would be obtained under free competition. If a householder lost a key, he would be willing to pay a relatively high price for a new one; its value is very small compared with the value of the contents of the house. Similarly, if a little specialised labour is absolutely necessary in the production of a valuable commodity, *i.e.* if there are no substitutes for it, the specialised workmen may strike successfully,

especially if a check to production of the final commodity leads to a large rise in price. The gains may be kept permanently only if the workmen in question are organised in a strong union which is able to limit its numbers effectively.

Strikes may also benefit labour as a whole in a rather paradoxical way. Increased gains may be used badly ; gambling and intemperance often follow on higher wages ; on the whole, however, the normal workman has so many fundamental wants left unsatisfied that higher wages will probably tend on the average to increase productive efficiency. Hence the result may well be an increased production which will more than counterbalance the employer's losses in higher wages. Thus if a strike leads to increased wages which are well spent, the result will be beneficial to all concerned.

It is to be hoped that strikes are a temporary phenomenon which will give place to saner methods of obtaining satisfactory wages. Arbitration courts and consultative councils (*e.g.* Joint Industrial Councils) have done much good work, but the strike is yet too prominent a feature in modern industrial life. Trade unionism, however, has important positive achievements to its credit ; it is a power to be feared, and hence the working classes often obtain justice without resort to a strike ; it has also shown a capacity for working in harmony with employers when the well-being of the business or the industry as a whole has been in question. It seems possible that the saner unions are working their way through strife to industrial peace. Sliding scales based on the cost of living represent an important advance.

34. One of the most difficult and tragical of modern industrial problems is that of unemployment. Unemployment is a sheer waste of productive power, and so far the nation as a whole must

suffer. It is a chronic disease, which periodically assumes alarming proportions. Its shadow is over the working life of the normal workman; its effects restrict his means, and are almost uniformly unfavourable.

Unemployment is a result of the maladjustment of productive factors. In a stable condition of industry, economic friction is so powerful that a workman may take years to settle into the place for which he is most fitted; "square pegs in round holes" are too common. When industry is continually changing its form, the problem of satisfactory settlement becomes yet more difficult. Unemployment is not always due to inefficiency; it may happen when a man has been doing work for which he is unsuited. Economic friction is thus a permanent source of unemployment.

Trade tends to run in cycles; an obvious example is that of the annual economic movements which depend on the harvest; on the whole, trade is better when the harvest is gathered. Some trades are seasonal; *e.g.* builders are least busy in winter. There are also larger and longer periodical movements which take place at intervals of a few years, which are known as trade cycles; spells of good and bad trade alternate. In good times, overtime is worked, but the increased production usually necessitates the employment of more labour. Thus the amount of labour in use in good times is superabundant in bad times; partial employment of most workmen and actual unemployment of some must then occur. The less efficient are no longer required.

Other changes occur which are not periodical. An article may suddenly drop out of fashion, or an important trade may lose a large foreign market through a new tariff or other reason. Unemployment in certain trades is thus generated.

Unemployment is increased by the system of casual

labour in use in dockyards and similar places. There are many men of low physique, intelligence, or industry who are forced into or prefer casual labour to steady employment. Such men must live by taking advantage of the limited employment offered; if labour is employed by chance methods, a large number of unsuitable men may attend at a dockyard in the hope of obtaining employment. At certain busy times, all will be required; at other times, all the men who are employed when the work is greatest will be liable to compete for the limited employment. Thus a very large number of men are continually competing for employment which requires only a proportion of them.

Unemployment is sometimes caused by trade union action, though the unionists claim that the ultimate results are favourable. After a successful strike, the wages may be forced up beyond marginal net product, and the inefficient will be dismissed, unless the unions can temporarily prevent it. Again, the successful claim to a minimum wage has the same effect, if the least efficient workers cannot earn the minimum.

Unemployment may be caused temporarily by the sudden introduction of forms of fixed capital which can displace labour. The Luddites of last century have been accused of short-sightedness for their opposition to machinery, but the effect in their case was undoubtedly widespread unemployment. The country as a whole gained by the change; even the working classes gained in the long run, but there was a period of suffering. The "lump of labour" theory is well illustrated by this example; workmen tend to believe that the amount of employment is fixed, and that if one set of men are working overtime, or if machines displace human labour, other men will be under employed. For very short periods, there is some

truth in the argument; for longer periods, the lowering of the price consequent on the increased production by more efficient methods calls forth further production which will ultimately absorb the displaced labour.

The remedies of the diseases must follow on the analysis of the causes. Economic friction can be partly removed by efficient and well-organised labour exchanges, which must receive the confidence of employers and employed. The present exchanges have been strongly criticised as inefficient, but they will doubtless be improved as the result of experience. Casual labour should be reorganised; labourers should be accepted in the order of their efficiency, or an advantage should be given to regular men. The excess labour would thus be discouraged. If a man knew he had no chance of work, he would cease to compete for casual employment. In this way, the status of the remaining labourers would be raised. To lighten periodical difficulties, the State and municipalities should carry out their schemes of road making, etc., in times of depression. Employers should distribute under-employment among all their men, that is, they should put all their regular (not casual) workers on short time, so that no one should be wholly unemployed. There will still be a residue; to some extent this can be met by insurance; the hopelessly unemployable should be treated in labour colonies or other special institutions.

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CHAPTER XIII.

DISTRIBUTION.—INTEREST.

1. The payment of interest for the use of money dates back to very early times ; usury has persisted
Usury. in spite of powerful opposition. The mediaeval attempts to abolish usury failed, for when borrower and lender alike wished to carry out a transaction, the law could usually be evaded. The persistence of usury through civilised experience makes it clear that there is a deep and abiding cause for the existence of interest.

Usury in former ages was rightly regarded with disfavour. In early mediaeval times there was little opportunity of using large stocks of borrowed capital to further trade or production. The man in temporary dire need of money was usually a poor man in distress, a spendthrift, or a landowner with ample possessions who required actual money to tide him over a temporary difficulty. If security of repayment was complete, the requirement seemed, not unnaturally, to savour of greed. Men could understand the desire for payment for the use of goods which gave continuous satisfaction, or for money when there was a risk of loss ; they considered, however, that money in itself was "barren," and that the lender should claim nothing beyond the actual money he lent.

Yet men insisted on paying interest, if they could not otherwise borrow money ; the desire for loans was so insistent that the laws against usury were deliberately

made of no effect by lawyers themselves; legal fictions were invented under whose cover money could be lent at will. As production grew and commerce developed, the new era saw the growth of a class of merchants and, later, of manufacturers, whose habits of thought rendered them impatient of artificial restrictions suitable to a less enterprising age; such men needed money in abundance, and found little difficulty in obtaining it.

It became clear to the eighteenth-century thinkers that the legal prohibition of usury had outlived its usefulness and that the modern demand for money was based on the sure instinct of its necessity to a developing industry. In early times the usury laws had actually been a cause of a rise in the rate; lenders wished to cover risks of detection; in the eighteenth century the laws were merely neglected. Later, Bentham showed the folly of attempting to control economic forces so strong that all laws were evaded; in 1854 the laws were abolished.

2. Thus a considerable sum will be paid for the temporary use of money. This payment is Gross Interest. On analysis, it is found to consist of two principal elements; one of these consists of the trouble and inconvenience necessitated to the lender, for which he rightly demands compensation; the other is the payment for the mere use of the money, and is called "net" or "pure" interest.

In the first element, risk is prominent. To-day, when life is settled and laws are easily and rigidly enforced, risk is a much less important factor than it was in the days when the lender's life or liberty might be in danger at the hands of the borrower. Even to-day, however, large sums of money are lent to speculative entrepreneurs whose ultimate success is uncertain; the loan of money to spend-thrifts is relatively much less important than formerly. A

lender will require a sum of money to serve as insurance against risk; such risk may be a trade risk, depending on business conditions, or a personal risk, varying with the person to whom the loan is made.

3. Insurance plays an increasingly important part in economic life; the laws of insurance as an **Insurance.** element in gross interest are the same as those of life insurance, etc. Uncertainty is so great an evil that cautious people will pay for its removal. By insurance, uncertainty is not merely transferred, but in part destroyed. Loss is not avoided by insurance, but is spread out evenly among a number of people.

Suppose a merchant sends out goods to a place where prices are so much higher that a profit may be made; he will risk loss through the fear of price changes before the transaction is complete, but there will be an equal chance of extra gain. If he wishes a certain profit, however small, he may "hedge"; thus he may speculate on an exchange in such a way that if he loses on his business he will gain on his speculation, and *vice versa*; if his goods rise in price, he will gain on his business and lose equally in speculation. The net result is that he retains simply his gain which results from difference of price from place to place.

This illustrates the principle of insurance; on rare occasions such self-insurance is possible. If a shipowner possesses one ship, the chance of its loss is small, but the result would be so disastrous that his peace of mind is cheaply purchased by the insurance money; a large shipowner need not insure (though he usually does for the sake of convenience), because he can estimate roughly what number will be lost; his losses will almost certainly be less than the insurance premiums required, and there is virtually no fear of disaster.

Insurance is hedging on a large scale, carried out by a company formed for the purpose. A large life insurance company can predict the total number of deaths in a given period with remarkable accuracy; a large, soundly conducted company of this kind is one of the safest of ventures. The company pools all the individual chances of a large loss, and pays out the actual losses, which are fairly constant in total amount; as premiums it receives a sum which will cover the actual payments, together with profits, fixed by competition between the different companies.

Insurance tends actually to reduce risks, for the companies insist on the use of proper safeguards. Risk is also reduced by the spread of knowledge; State information and efficient newspapers may give invaluable knowledge of foreign conditions, and thus a fertile source of business risk is removed.

Business men who seek loans from bankers will pay a risk interest fixed in some such way; in practice, however, personal risk may be all-important. Trade risks are calculable, but individual estimations must be made to cover personal risks, an individual business man will borrow from the banker who estimates the risk at the lowest rate.

4. Another element in gross interest is inconvenience, strictly so-called. When a man lends money, **Other elements in Gross Interest.** he loses command of it for a period, apart altogether from the fact that he might be making a good use of it himself. He may require a payment, however small, for the fact that his money is locked up, and that he gives up the choice of the use to which he may put it. When a man lends money, also, there is a chance that he is losing a possible future favourable employment for it. In certain cases, especially on a stock exchange, the payment for the locking up of capital for a short period may be very high.

Again, many loans entail considerable trouble to the lender, especially with regard to bookkeeping and arrangement of continual new loans for short periods. The charges of pawnbrokers sometimes seem very large when reckoned on an annual basis, but an immense amount of trouble must be taken, and the pawnbroker rightly demands payment; if such charges were really exorbitant, new pawnbrokers would soon drive them down by their competition. The gainings may be a little above the normal, for most people avoid the occupation, there are, however, many men who would immediately be attracted by very high profits.

The remaining portion of gross interest is net interest, or interest in the true economic sense. Net interest is the payment which must be made to the owners of capital by an entrepreneur in return for its services as a factor in production. There is thus a large demand for "barren" money, at a price which in normal times is about 2 or 3 per cent.

5. Money is useful to an entrepreneur because with it he can obtain goods which will aid him in production. Suppose a man in a new country where good land was free; he might sow corn, and nature would automatically increase its amount. If, however, the man possessed no corn, he might borrow a little; after a time, he would be able to pay back the original corn and would be prepared to give back more than he received, and yet retain part of the surplus. The borrowed corn was productive in the truest sense. This extreme example illustrates the process at work in everyday business; an employer can increase communal wealth by changing the form of goods; to do this he needs certain other goods to be bought by money; he cannot wait till the process is completed, but must have the productive

**Why money
is borrowed.**

goods at once; he borrows money and in time obtains goods which are more valuable than the goods which have been used up in production, and a surplus is left over; the employer expects this surplus, and part of it is paid in advance to the capitalist, who demands a payment for the mere temporary use of his money.

The entrepreneur is willing to pay interest on account of the Productiveness of Capital; it remains to be shown why it is that the capitalist can insist on it; obviously the reason is that capital is scarce; in other words, the proportion of the total wealth annually produced which is set aside from immediate consumption and applied to productive uses is not as large as could be made use of in industry. The reason of this scarcity must be investigated.

6. The German socialists, *e.g.* Karl Marx and Rodbertus, believed that interest was a form of robbery, and that capitalists had obtained a strategic position; labour was kept down to subsistence level, and the bulk of the surplus was obtained by capitalists. They professed to find inspiration from Ricardo, but were misled by his conciseness; a careful study of Ricardo shows that he realised fully that labour needed the help of capital, and that capital was more than a mere product of labour. The socialists assumed that as capital was in the last analysis derived from labour, the labourers were entitled to the whole produce of labour; they supposed that labour was being exploited.

Marx's conception of labour itself was one-sided; brain work is as essential to production as muscle; in the future it may be increasingly important, as muscular work is being continuously displaced by machines, *i.e.* capital. Even the employer's work does not differ in kind from that of the workman, and under present conditions it is essential. The early socialists tended to stress the import-

**Socialist
Theory of
Interest.**

ance of manual labour compared with brain work. The second mistake was more subtle, and can be fully realised only when the theory of interest is completed; briefly, these socialists overlooked the fact that a part at least, of the huge capital required in modern industry is set aside only as the result of some form of sacrifice; much is no doubt provided by rich men without effort, but the whole would not be saved without some exercise of self-restraint, which would not all be forthcoming were payment not received.

7. Böhm-Bawerk propounded a theory of interest which has been favourably received not only in Austria but also in America. He supposed that interest was due to the fact that men prefer present goods to future goods, or that there was an "agio" on present goods. Because of the existence of this preference, men are loth to lend money; when it is paid back, the exact value may be returned, but £100 a year hence is not as valuable to the normal man as £100 at the present moment. Thus as present goods are more desirable than future ones, a man must pay back more than he borrowed, or the lender will feel himself defrauded. £100 a year hence may seem to be worth only as much as £95 now; £100 two years hence may seem worth only £90 to-day. Thus if £90 is lent to-day, £100 will be expected two years hence; if £95 is lent, £100 will be expected one year hence.

The observations of this school were correct, but they seemed to stress the existence of a premium too much; whatever the height to which the premium rose, interest could have no practical importance if capital were useless. Böhm-Bawerk realised the existence of the effect of demand for capital, but his theory seemed to attach too much importance to the supply side of the problem.

**The Agio
Theory.**

8. As in the case of the price of an ordinary commodity, the interest, or the price of capital is determined by two factors, supply and demand; the price is fixed as that which equates supply and demand. The causes which determine the supply of capital have been considered in former Chapter VI.; the demand for capital is dependent on the needs of producers. Interest is paid because capital is productive; it is demanded because of its prospectiveness; a prospective sum of money is worth less than its face value.

The law of diminishing utility applies to capital; the return to each successive unit of capital diminishes after a certain point. An employer might pay a large sum for the use of certain essential fixed capital; he may be able to borrow money to buy this at a cheaper rate than he would pay if obliged to pay its full worth to him; *e.g.* he might be willing to pay 20 per cent. for money he is able to get at 5 per cent. He will not pay more than 5 per cent., for there will be competition among lenders while the rate is above 5 per cent.

Thus the employer will continue to use new capital, until the marginal utility of capital to him is 5 per cent., the assumed market rate of interest. He cannot obtain money at less than 5 per cent., for at less than this rate new borrowers would appear, and old borrowers would require larger loans. If now for any reason the demand for capital were suddenly to increase, *e.g.* as a result of increased productivity through a discovery of new processes, the marginal demand would rise; the immediate effect would be a rise in the rate.

Such a rise would stimulate the supply of new capital, which must in the long run occur as a result of increased saving. Saving follows the law of diminishing return in

the sense that each successive unit of capital is offered with ever greater reluctance. Perhaps millions of pounds are annually saved with little or no effort; if these savings sufficed for production there would be no need for a high rate of interest. Employers, however, continually call for more capital; as spare money no longer suffices, it must be supplemented by money which has been spared with an effort from immediate consumption; the owner of this new capital must be paid for his sacrifice in giving up present enjoyment. As more capital is called for, it must be provided by new lenders, who value present consumption highly relatively to future; alternatively it must come from men who have already saved considerable sums from immediate consumption, and who are as disinclined for further lending as are those who are only just persuaded to lend their first contribution. Accumulation becomes ever more difficult, unless the wealth of the country increases.

9. That unit of capital lent at greatest cost, *i.e.* saved with greatest reluctance, will not be lent unless the interest covers that cost, *i.e.* is sufficient to overcome that reluctance. In a competitive money market, there can be only one rate of pure interest; one lender obtains a high rate, and so all will be able to demand this rate; if the rate were lower, competition among borrowers would force it up. Thus the interest on capital will be the payment which must be made for the portion which is most reluctantly forthcoming.

While the rate is below the equilibrium point, the demand price will be greater than the supply price; as the rate rises, the price demanded by the man who will just lend capital (which is also that required for the last portion lent by every lender) will approach closer to that offered by the borrower just willing to borrow (which is

**Marginal
Theory of
Interest.**

also that offered by every borrower for the last portion borrowed). Equilibrium occurs when these two marginal prices coincide. When the rate is above or below the equilibrium, forces are set in motion which tend to restore equilibrium.

Thus, suppose that increased demand has made a new equilibrium rate of $5\frac{1}{4}$ per cent. Now suppose that lenders mistake the market and still demand 5 per cent. Lenders will find that there is greater competition for loans; when all the money that lenders will loan at 5 per cent. is taken up, there is a further demand at this rate. The marginal lender will raise his rate and will find that at $5\frac{1}{4}$ per cent., all the money he is willing to lend at that rate will be just taken up. If borrowers offer too much, inversely the rate will fall to $5\frac{1}{4}$ per cent.

Just as wages tend under perfect competition to equal net marginal product, so interest tends to equal the marginal productivity of capital. On the other side, that on which Austrian economists have laid stress, it tends to equal what has been called marginal forbearance. When the two marginal prices are equal, interest is equal to each of them. Equal stress should be laid on the two sides; neither is more important than the other. The socialist theory erred in that it concentrated attention on capital which was accumulated without trouble; it scorned the notion of "abstinence" as applied to the savings of rich men; the socialists of that time did not realise that the amount contributed by rich men was quite insufficient for industry. Interest arises out of the need of poor men who save with difficulty; it is true that rich men obtain a large surplus because they benefit by the rate of marginal interest required by marginal lenders; but it still remains true that, were it not for the attraction of a high rate of interest, industry would be crippled through lack of capital.

10. The existence of unearned interest cannot be denied ; it is of the same nature as rent and of consumers' surplus. Such surplus is not, however, true exploitation ; it is a social gift. **Unearned Interest.** The early economists were perfectly right in attributing the existence of interest to abstinence, for the rate is determined on one side by marginal degree of abstinence. Even so, the term "abstinence" should be replaced by a more colourless word which will include all forms of saving. The statement that interest is the reward of the abstinence necessary for marginal savings rightly carries a moral implication ; when a modern economist says that interest is the reward of "waiting," the statement is one of economic fact.

A farmer may be willing to sell butter for 4s. a pound, but if the marginal price is 5s. he will demand this price, and obtain a producer's surplus. So a rich capitalist will demand interest on all his savings, though he earns it only on the margin. Saving is similar to labour ; some work, like some saving, gives a balance of pleasure ; it would be as reasonable to prohibit the reward to saving as that to labour ; abstinence is a result of effort as truly as is manual work. Again, labour might be paid out of its actual product ; in fact, it is paid long before its product is sold, but the labourer would prefer to be paid at once, even though he knows that he must be paid a less amount for the privilege.

11. This leads to the question of discounting. An employer requires compensation for the money he must lay down before his product can be sold. £100 a year hence is worth much less to-day. The present worth can be deduced if the rate of interest is assumed ; it will be that amount which in one year's time at the current rate of interest will increase to

£100; this is obtained by a simple arithmetical calculation. A still simpler method is used in practice; an employer or financier calculates the interest on the money for the given time and subtracts it from the face value; an employer would take the present worth of £100 due two years hence at 5 per cent. as £90; in reality, it is a little more. This process of discounting is highly necessary, for an employer must pay interest on the money or other borrowed capital he holds; interest is a first charge on an employer's profits. Measured in terms of product, a workman thus obtains more than the face value of his wage, for he has obtained the discounted value of a larger amount. An employer may obtain an apparently high price for goods whose payment is due six months hence; the actual present value is much smaller. So a shop-keeper who sells for cash may charge much lower prices than a credit concern, for not only are his risks less, but also he is paid at once and so need not charge interest.

12. The marginal theory of interest refers only to new capital. When money is lent, especially for industrial purposes, it is usually absorbed as capital goods. The employer bases his demand price on present and probable future industrial conditions, for a time, the reward to capital may agree with his expectations. If the capital is converted into fixed capital, *e.g.* looms, changes in trade conditions may make the looms more or less valuable. Now it is not expedient to regard interest as variable throughout a competitive area. Money is everywhere the same throughout a given country, and thus net interest will be absolutely constant if competition is perfect, for one sovereign or one note is as good as another. Thus it is not advisable to say, as the productivity of the looms changes, that the rate of interest on the original capital alters; it is much

Application to
Old Capital.

better to suppose net interest to be constant, and the value of the looms to change in conformity with their product. The process of estimating the value of fixed capital by its product is known as Capitalisation.

13. Suppose that the productivity of a loom was estimated at £500 per annum, that the loom **Capitalisation.** was indestructible, and that the estimated productivity was constant. If interest were at 5 per cent., the capitalised value of the loom would be £10,000, for the employer would obtain the same income from the loom as from the money. The value can also be obtained by adding together the present worth of all the annual incomes, *i.e.* a sum of varying terms gradually diminishing to zero; a simple application of algebra (geometrical progression) will show that the sum will amount to £10,000. (Interest is taken at the net market rate)

The latter method is used in the case of an article which wears out after a time; the net product attributable to the article after the first year is discounted, and the same process applied to every succeeding product. The sum of the discounted values is taken as the value of the article. When this is done, the article is found automatically to yield the market rate of net interest.

By this means, old capital is artificially brought into line with new; all capital thus obtains the same rate of net interest under competition; this must not be regarded as a proof of the tendency of net interest to equality, for that would be to argue in a circle. It is said that net interest on new capital tends to equality because such capital takes the form of money. There is a real advantage in capitalisation, for it allows of an extension of the reasoning otherwise applicable only to money; capitalisation is worked out, however roughly, whenever fixed capital is sold, and thus the process is not merely a mathematical abstraction.

This capitalisation occurs in practice in the case of land. If a man buys a pair of boots, the expected benefit may be viewed as a whole, and they will be worn out so quickly that the question of discount is of small importance, the benefits obtained from land stretch out indefinitely, into the future. Thus the value of land alters as interest alters; when interest is high, discount is an important factor, and the value of land is lower than the normal. Thus the marginal degree of abstinence of different people may tend to be equalised by the sale of land. A landowner whose marginal "impatience" is large will prefer money to land, for he must wait indefinitely for the full satisfactions land can supply; thus he will sell land. The buyer is presumably a man whose marginal impatience is less than the normal. After the sale, the impatience of the landowner will diminish, and that of the buyer will increase. Thus, the degree of marginal abstinence in different men may be equalised not only by money loans, but by sale of goods which give out their satisfactions slowly; the sale of looms would have such an effect.

14. It is a difficult matter to disentangle actual gross interest so that net interest is isolated. Gross interest varies greatly, not only from place to place, but from time to time. The attempts that have been made to trace the course of net interest in time, show that it is subject to changes which are on the whole slow; periods occur, *e.g.* 1914 to 1920, during which net interest varies considerably; usually there have been long periods during which pure interest has been fairly constant.

While general prices are rising, interest tends also to rise, but the stable rate is independent of the amount of currency; this may be noted, though it cannot be explained at this stage. More important are the secular changes in

**Changes in
Net Interest.**

interest which can be explained in a simple manner. Mill believed that interest showed a tendency towards a minimum, which might be very low. He realised the great growth of capital; in modern speech, the growing wealth of the country might lead to a large increase in savings and thus of capital; thus the marginal utility of capital might become very low. This seems unlikely; past history has shown such tendencies towards minimum interest, but the rate has never fallen for long below about 2 per cent. The explanation is found above; a low rate discourages saving, and stimulates the demand for capital; capital finds new productive uses as it becomes more abundant; modern industry is insatiable.

15. A zero rate is theoretically possible; if saving were the rule, and wants did not develop so quickly as capital, it might occur that no employer would accept any form of capital if its use was offered free; industry would have absorbed all that it could economically use. If the process continued, it might be that capital would become a drug on the market, and that men would have to be paid to take care of savings; interest would then be negative. There are no signs of approaching this state; even the enormously increased savings of England to-day are insufficient to satisfy industrial demands; thus the owners of capital continue to claim a very large share of the national dividend.

**Possibility of
Zero Rate.**

REFERENCE.—*Bohm-Bawerk. Capital and Interest.*

CHAPTER XIV.

DISTRIBUTION —EARNINGS OF MANAGEMENT.

1 Land, labour, and capital would be of little use as productive agents were they not brought together by a directive agent. An individual who brings together these three factors in a business, demands and obtains a reward which is known by the rather loose term "Profits." "Earnings of Management" is a more precise term, and more useful for analytical purposes. Profits will first be considered in a general sense.

The net profits, or profits simply, of an entrepreneur may be taken to mean the whole net receipts after allowance has been made for depreciation or appreciation; profits represent the whole amount remaining when the necessary factors have been paid for. It may be that the employer has used his own capital, partially or wholly; profits will thus include a gain which should rightly be called interest; the employer might have invested his capital and obtained interest; earnings of management do not include that element of profits which is estimated as the gross interest on the money used by the employer.

2. An important distinction must be made between profits per annum and profits on the turnover. Many shopkeepers believe in the principle of "small profits and quick returns"; the profits on the turnover are small, but transactions are so numerous that annual profits may be large; a motor

**Rate of
Profits.**

car or piano dealer, on the contrary, may make very large percentage profits on the turnover, but as transactions are few, the annual profit is not abnormal. Annual profits are more important for present purposes.

The conception of "rate of profits" would be most useful were it not for the difficulty of obtaining such a rate in practice; rate would be the ratio of profits to capital; the task of finding the money value of the capital in use is usually very difficult.

In a general treatment, the term "profits" may be used instead of "earnings of management," for interest is fairly constant. From this broad standpoint, it is found that profits bear a close analogy to wages, for labour includes brain work. There is no dividing line between responsible work under the orders of an employer and independent enterprise; the work of some paid managers contain more truly organising work than does that of some independent employers who do much of the ordinary work of the business. There is a continuous movement between the employing class and the employed, and *vice versa*. If an employer is doing badly, it is open to him to take a salaried post, if an enterprising employee wishes to start a business, he can obtain the requisite capital if he can convince a bank manager of his fitness. The barrier between manager and employer is immeasurably less than that between workman and professional man, at least as regards adults.

3. Thus, speaking generally, normal profits are defined in just the same way as normal wages. On the one side, profits will be limited by marginal net product, at least under perfect competition. Like a workman, an employer tends to obtain what he can earn; under perfect competition, he cannot be a mere parasite. An employer must

**Determination
of Normal
Profits.**

add something to the combined productivities of the component factors he owns or leases; if not, the owners of the separate factors had better work apart. If there are a hundred small shops making normal profits, an entrepreneur would gain nothing by combining them under one ownership and continuing to work them as before. But if he organised them so as to bring out important economies, he would increase the total productivity of the combination, and would be rewarded by profits. The play of competition tends to throw organisation into the hands of those employers who can obtain the most economies from the combination of productive factors. The successful employers increase their businesses, while the inefficient ones are gradually weeded out.

If profits are abnormally high, many managers and smaller men will be tempted to start a business; the marginal net product of organisation will thus fall, while that of managers will rise. Thus, profits will fall, and the attractive force will diminish. If profits are abnormally low, some employers will be obliged to take salaried posts; the marginal net product of organisation will rise, and that of managers will fall; again there will be equilibrium.

4. The side of supply must also be considered. The status of employer is attractive in itself; **Supply of** the attainment of independence is equally **Entrepreneurs.** pleasurable, for just as a peasant will work hard for low wages rather than be dependent, so will a small employer work hard for small remuneration. Again, the possibility of very large profits is a great stimulus to some minds. On the other hand, there are natural barriers against the dependent classes; risk is an essential factor, and failure means ruin; the bankruptcy laws to some extent encourage enterprising men, but bankruptcy is in itself a great evil to the normal man. Most men are to

some extent afraid of responsibility, and shrink from the risks of employing. In most cases, knowledge of trade conditions is essential. Thus, the employing classes are mainly recruited from a minority of men who are already in the requisite atmosphere. As a rule, a man can become the head of an important business only in one of three ways. First, he may have hereditary advantages and be specially trained, almost from birth, for this particular purpose; he may live in the atmosphere of business (though on the other hand, it often happens that a boy grows up in antagonism to his father's business); at any rate, the son or relative of a successful employer obtains an initial start which in many cases is a decisive factor.

Next, an employer may come more and more to rely on the help of a responsible manager or other employee; in many cases such a man is taken into partnership, and may finally obtain full control, while the original owner may become a sleeping partner. If there is no room for a partner, if there are efficient relatives who can conduct the business, or if the business is allowed to decay under inefficient ownership, the manager may decide to start an independent venture, for his experience has taught him those secrets which allow an employer to obtain a position of semi-monopoly; equally important, it has provided the atmosphere in which an employer must work.

5. Thirdly, there are exceptional men who reach the employing classes, sometimes from the lowest strata of society. Such men had relatively better opportunities of quick advancement in the early days of machinery, but exceptional cases still occur. To-day, however, the scales are so weighted in favour of the man already in a strategic position, that even an industrial genius must take years before he can climb into the highest positions. The

**Recruitment
from Lower
Classes.**

barrier is not so much that between employer and employed; even in the lowest strata it is possible for a man to be an employer on a small scale; it is rather that between the lowest and the highest grades of labour. There is a steady drift of labour from the workhouse through the grades of skilled labour, foreman, manager to employer. The stream is very thin at the bottom and at the top, for it consists of exceptional men, but it exists. It is not so obvious as in the late eighteenth and the early nineteenth centuries, for an exceptional man must move more slowly towards his goal; in the vast majority of cases the process must be continued through more than one generation. "Vertical" mobility from class to class is slow compared with "horizontal" mobility from trade to trade.

Thus there has always been a scarcity of efficient employers; the rewards to organisations have been correspondingly high. As in the case of skilled workmen, preparation for specialised work is apt to be a slow process, and thus the supply of employers cannot suddenly be increased; even taking a long view, however, the number of men who are able enough and fortunate enough to become employers is very limited, so that under present conditions the supply of organising ability is permanently restricted; profits are, on the whole, permanently high. There are many men on the margin of doubt as to whether or not to become employers, and thus normal profits may oscillate between wide limits; the number of potential employers is not so great as to bring down profits to the level of wages.

6. Now consider the case of a potential employer; if his knowledge of market conditions is accurate, and he is not misled by over confidence he will consider not only present normal profits, but exceptional profits; if enterprising and sanguine, he

**The Normal
Employer.**

will be attracted by the prospect of large gains which are being made; if cautious, he will rather contemplate the numerous failures; if he is a safe man he will concentrate attention on the profits of normal firms. On the whole, the attractive force of a trade on such men will be measured by the decisions of the men of normal ability and character; the estimates of the sanguine and the cautious tend to balance each other. Thus the action of a normal man who concentrates attention on a normal business, roughly balancing the chance of great gain against the fear of ruin, may be taken as typical of the whole. If a normal employer shows fear, profits are probably declining; if the normal manager becomes an employer, profits are probably high. In either case, however, the most marked effects will be seen at the margin; when profits fall, the least efficient employers will actually fail; when they rise, the most enterprising managers will first become employers.

In the long run, normal profits will tend to realise the expectations of the normal employer, though quite other tendencies are at work during short periods. If long period profits are higher or lower than the normal, the supply of employers will expand or contract, and bring back profits to their former level, or near it. Thus, normal profits, like normal wages, but unlike rent, will enter into the cost of commodities. Exceptionally high profits affect cost in the sense that they attract new employers, but their influence is roughly counterbalanced by failures. If the profits do not reach expectations, after allowance has been made for exceptionally high and low profits, the number of employers will diminish and profits will rise; if market commodity prices do not grant the normal profits which are necessary to call forth a sufficient supply of employers, they will be obtained by limiting the supply of employers. Similarly, we saw that if the remuneration of works

chemists, or doctors, or other men whose work requires expensive training did not cover the expenses of training, the supply of such labour would shrink until it did, as a result of the rise in marginal net product. It must be noted that the profits of the average employer do not necessarily possess the same attractive value as do profits as a whole, for very high or very low profits may exercise a disproportionate influence; in practice, however, the profits of the average man are considered as fairly representative

Complexity of Profits. 7. The early economists tried to find a simple and comprehensive theory of profits; the socialist description of profits as exploitation was an example. Some professed that profits tended to equality. Profits, however, are of so complex a nature that no satisfactory simple theory has been propounded, and general statements in regard to profits are not often of great value. Business units vary from the casual and fleeting "one-man business" to stable amalgamations which control an appreciable proportion of the labour and capital of the country. The small trader earns profits; the responsible manager of a large company receives a salary, though his work may include much real organising work. It would be almost impossible to frame a simple theory of profits which would include the small independent trader, the large employer, the small holder, and the shareholders of a joint stock company, while excluding responsible managers. In a general survey of profits the relationship with wages must be stressed. None the less, profits and wages differ in many respects, and prominently so in short periods; the social importance of distribution also compels a closer analysis of profits; before attempting this, it will be useful to glance at the peculiarities of individual businesses.

The two extremes of business units differ in more than size. A small, one-man business is often carried out by an enterprising man with little capital, whose one aim is to take quick advantage of market changes. Such a man is essentially mobile; he has little or no fixed capital, and can change his methods quickly and easily. His work is risky, for he is at the mercy of quick changes that he cannot always utilise. Small businesses which fulfil these conditions tend to provide large profits, for they are managed as a rule by men of exceptionally quick intelligence; such a man will earn more than his fellows in the same social stratum, and will likely obtain a bigger rate of profits than is obtainable in big business.

8. Production which is carried on by routine methods involving little risk, but requiring much expensive fixed capital offers no scope to such a man; such undertakings must be financed by men or combinations of men who own or control a large amount of money. Large joint stock companies are especially suitable for such work. Banking and rail transport are examples of trades which are especially suitable to company management. Most other trades are intermediate between these extremes; roughly speaking, the greater the amount of fixed capital, the less risky and the more conventional are the business methods, the lower on the whole is the rate of profit. Like other generalisations concerning profits, this rule is subject to important exceptions.

9. So far, long period or normal profits have been considered; short period profits present peculiarities which differentiate them from wages. Thus, while it is true that wages and profits each depend on product, and that in the long run each will tend to be remunerated according to marginal

net product, this occurs only as an averaging of profits. Profits are far more unstable than wages. In bad times, the wage earners are unemployed or on short time; normally there is no great fall in wages, but the employers are barely covering prime costs, and from the long period standpoint are working at a loss. In good times, the employer reaps his harvest, but the workman does not fully share in his prosperity. Again, in good times, the profits of a normal employer excite envy, but they should be considered in conjunction with the times of depression when supplementary costs are not covered. Thus profits fluctuate in sympathy with market commodity prices; as most of the employer's charges, including wages, are fairly constant, it follows that profit fluctuations will be even greater than price changes.

10. Wages are to a large degree a payment for actual effort; some men may do their work easily, but the efforts of different workmen doing the same work are comparable. In the case of short-period profits, strategic position is the vital factor. At any moment, an employer's profits depend on the relation between his abilities and resources, and the demand for the goods he makes, to a large extent he is a passive agent. Thus the position of an employer who is temporarily in a fortunate situation relative to demand is comparable to that of a landowner who owns land of peculiar richness; the difference is that if the employer's profits continue, he will gradually meet with increasing competition, while the supply of the best land is limited. Thus an employer's profits during a short period are made up largely of quasi-rent, which may be positive or negative, if normal profits are taken as standard. The differences between individual profits are thus far greater than those between individual wages.

**Inconstancy
of Profits.**

11. The reason is seen when profits are analysed. That part of profit which represents the interest the employer would have received had he invested his money, is in no way different from the interest he has to pay out for the money he borrows; thus, this interest should be subtracted from profits, or for simplicity, we might consider the case of an entrepreneur who works solely with borrowed capital. For short periods, earnings of management will be considered. The first element is that of wages of superintendence, or net earnings of management. All employers must do a little actual work, mainly superintendence; in a large business this will be confined to the supervision of the work as a whole or to that of the managers. In the army, a high officer rarely interferes with the internal administration of a unit; he inspects the unit as a whole and thus indirectly supervises the work of the junior officers. Such supervision is labour rather than organisation.

Wages of superintendence are best considered as the wages the employer could actually earn if he were a paid manager, and did the same class of managerial work he is actually doing. Such an estimate is not easy to make, but for present purposes it is sufficient to assume that it may be made. Gross earnings of management cannot permanently fall below this level (after allowance has been made for incidental advantages of an employer's position, and the difficulty of realising stocks and fixed capital has been considered), for otherwise the employer would become a paid manager, but they may fall below it for considerable periods; an employer may consider it worth while to continue production so as to preserve continuity, and to be ready for the better times which will probably follow.

12. The next element in net earnings is that of allowance for risk; risk is often covered by the building up of a reserve fund. A wage earner is partially insured against risks of business; his wages are apparently low not only because he is paid at once, before the product is sold, but also because he receives a wage irrespective of the state of the market; he may receive the same rate of wage while the employer is working at a loss (considering supplementary costs). If an employer borrows money, the lenders safeguard themselves by an increased rate, and profits must cover not only this increased amount but also a similar insurance which the employer himself demands for undertaking the serious risks of business. As business men are becoming better educated, and as information of world conditions is spreading this necessary payment is gradually diminishing in amount.

These are persistent elements in earnings of management; they are equally present in long period profits, of which they form a core which is relatively stable. These two elements are probably as constant in amount as are wages and interest. The violent fluctuations of profits are due to the presence in earnings of a third element, a surplus or residue, which is sometimes called pure profit. Pure profit is perhaps the nearest approach which can be made to the conception of the payment to organisation as a factor in production.

13. A pure organiser, meaning by this a man who does no productive labour, is essentially creative in the sense that organisation makes possible an increase of production otherwise impossible. His work depends on two groups of conditions: first, it depends on the number and quality of the available factors of production, their price, and the appreciation of their

productive power when combined; second, it depends on the state of demand for the commodity to be produced. The supply of factors is, relatively speaking, fixed, but their prices may vary greatly; demand for commodities is perhaps still more variable. Thus the essence of the organiser's task is so to obtain the right quantity of factors in the right proportion, to combine them in the right way that the particular amount of commodities shall be made which shall obtain the largest profits.

14. The difficulty is at times stupendous. First, the employer does not produce for a present known demand, but for a future demand, whose extent he must gauge from present conditions. Further, much production is carried out in the hope of meeting a potential demand in a new market, at home or abroad; if an employer makes a serious mistake in estimating such a demand, he is ruined. This is a phenomenon almost peculiar to modern times; mediaeval craftsmen produced for a fairly steady market, and enterprise was a function of merchants rather than of producers. The law of increasing return makes possible an enormous production at low cost; the employer's real difficulty is that of marketing.

On the other side the difficulties are perhaps less. Analytically, the problem of combining different factors, varying in efficiency and in kind, into productive groups in which the factors gain new values through combination seems hopeless. In practice, the work is done with remarkable success; long experience has taught employers the general principles on which they must work. Similar businesses tend to be of similar structure; a new employer is usually safe in adopting a structure which has been found to be successful in other cases; he may experiment with a combination which has worked well elsewhere, and

gradually adapt it to his needs. As a rule, the problem is not that of bringing into being a ready made business, but rather that of continuous adaptation. A great part of the permanent structure is independent of ordinary changes in demand for commodities; the proportion between foremen and workmen is either constant or easily adaptable to circumstances. Further, when a business structure is working well, a slight maladjustment of resources is not of serious consequence; there is doubtless much waste of resources in every well-managed establishment, but a redistribution of factors would bring only a slight gain; in a badly-managed business, small maladjustments are much more important.

Thus the structure of a firm tends to become standardised; if in such a firm there are serious causes for concern, the effects will be soon recognised; sooner or later the obstacles to efficient working will be smoothed out. It does not follow that the standards on which most firms are built up represent the ideal forms of organisation; it does happen that such a standard structure will work, and that it develops into an increasingly efficient system. The average employer can delegate the small problems of organisation to managers and foremen, and he can thus leave his best energies for the consideration of the more uncertain problems of market demand for his goods.

The good organiser thus directs productive factors into such a combination that internal economies are most pronounced; if he can find a new method of combination more productive than the old, he will be able for a time to secure the whole of the extra gains thus obtained; if at the same time, he is alert enough to take advantage of changes in demand and, equally important, to restrict production when demand is about to fall off, and if he is fortunately situated with respect to demand, then he will

obtain an abnormally high profit; after all deductions have been made, there will be a surplus over normal wages of management.

15. This surplus contains two elements: first, there is what may be called a strategic or positional **Surplus over Normal Profits.** advantage, which will disappear when sufficient outsiders have been attracted into the business; this portion is a true quasi-rent, and corresponds to high earnings doctors are able to make when demand suddenly increases and new doctors are not immediately forthcoming. The other portion is also a kind of rent, and corresponds to the permanent advantage which a more efficient workman possesses over a less efficient one; it has been called a personal rent.

In long periods, a quasi-rent tends to disappear through slow increase of competition; the personal rent persists, and is the main permanent cause of the abnormally high profits enjoyed permanently by some men. In short periods, the two types of rent merge into one. The measuring line may be variously drawn; some economists have taken it as the income of the man who is just decided to remain an employer; he would be a no-profits employer (employing the term profits in a restricted sense) and all others would obtain a surplus; this corresponds to the Ricardian theory of rent. It seems better to assume as the base line the estimation of the normal employer who assesses risk and wages of superintendence at the normal rate and is not satisfied with a less rate.

Now this surplus thus measured is the only attractive force to normal men which is found in the long list of items which make up gross profits; it is the only advantage which employing offers to such men, for the satisfaction of being an employer has already been considered in estimating wages of superintendence. The

number of employers increases, in spite of the barriers which exist; it thus seems to follow that the normal employer receives a surplus; on the other hand, the less efficient employers who cannot even obtain normal wages of superintendence may be conceived to obtain a negative surplus. On this reckoning, the normal profits correspond to the scarcity rent of sites in a town.

16. If competition is perfectly free, the pure profit rent is small but permanent so far as it is due to the fact that existing employers are the best available business men; it is fleeting so far as it depends on trade conditions. If movement from below is sluggish, it is possible that every employer should obtain pure profit (*i.e.* every one obtains a scarcity rent when the marginal employer is taken as standard); differential profits due to superior ability and opportunities would still remain.

Thus when every possible allowance has been made, it seems that a small kernel of pure profit remains, even to the normal employer; it is probable that it would still exist under perfect competition. The critics of the present system are right when they state that the present employers are chosen artificially and are probably not the best possible men; it remains true that they are more efficient than the average, for if they are not the competition is keen enough to weed them out gradually; again, it must be remembered that the greatest volume of production tends to fall into the hands of the best men. Thus the existence of a past surplus has attracted the most enterprising men; natural selection has weeded out the inefficient; efficient producers still obtain a surplus which will in turn attract new supplies of enterprising men. The surplus attracts enterprise rather than ability; competition then tends to sort out the able ones. The system provides a continuous

supply of men who possess the necessary combination of daring and judgment.

17. Entrepreneurs perform a most useful function in the social economy. First, they are responsible for the efficient grouping of factors of production and, on the whole, the work is well done. Second, they bear the main risks of industry. Thus, modern industry has so far specialised types of productive ability that those who can do ordinary work well, and those who have special abilities as managers are relieved of a large measure of worry and responsibility. Risk-taking is a profession in itself; the entrepreneur stands between the workman and the effects of rapidly fluctuating prices; if the workman were paid out of product, his wages would vary between wide limits; the employer, however, takes the excess gains in good times and suffers loss in bad times; he obtains a greater profit as a reward for this species of insurance of workmen's wages, but this is a payment for a real service rendered. Risk-taking, on the whole, is a service to the workmen; organisation is a social service.

18. Distribution may now be viewed as a whole. When discussing the reward to each factor in turn, the existence of normal remuneration to the other factors has been assumed. In fact, all the factors are continually changing in amount and efficiency; the owner of each factor must compete with the owner of every other. If all the factors were inanimate, and in the grip of a single control, the tendencies which are now obstructed by relative scarcity would be allowed full play, if the factors were interchangeable to such an extent that marginal net product could be equalised. In this case, all factors would be used up to that point at which marginal net product was equal at all

points. The same thing would happen if the present possessors of labour, including employers, were under such absolute control. Intelligent and enterprising men would be taken from the overstocked occupations and made employers. Then, taking as equivalent units that amount of each factor obtained with equal difficulty by the controller, every unit, of whatever kind, would obtain the same marginal product. Under these circumstances, every unit would be entitled to the same remuneration. If employers and workmen were quite interchangeable, employer and workman could demand the same wage. There is no inherent superior importance in the employer's work; in a perfectly regulated state, there would be no scarcity of employers. So, a diamond is not inherently more valuable than a grain of corn; its potential utility is far less.

Under given conditions, land, capital, labour, and organisation may be employed in a theoretically most efficient manner, when the product is defined. This state is never attained, for some factors are too abundant, relatively to this ideal combination, and others are too few. To-day, employers are too few in number, but labourers are too many. If all were of equal ability, the ideal combination, as between different kinds of labour, would be obtained when all wages were equal. If one factor becomes relatively scarce, its owner obtains an advantage; if labour becomes more efficient and capital increases, then land-owners will benefit, because the balance has been disturbed; land is relatively rarer. If capital increases faster than other agents, its value will fall; interest will drop. If new land is opened out and capital increases, and workmen become employers, the wages of other workmen rise. The earnings of any one factor depend, firstly, on the size of the dividend to be distributed, secondly, on the relative abundance or scarcity of the given factor.

19. The present system of distribution is not ideal, but it leads to action which tends to improvement. Equality of income may be taken to be an excellent aim when it does not clash with more important aims; it is not difficult to show mathematically that equality tends to maximise human happiness, if certain reasonable assumptions are made. The present system fails to reach its own possibilities in three ways: the man who has formerly gained by its imperfections retains his advantage, through the power which money gives him; the high pay due to relative scarcity is not a payment to merit; the beneficial action of free competition is hindered by natural and artificial economic friction. The first flaw is serious, its effects are cumulative through many generations, it is not too much to say that much present misery is due to injustice which occurred nearly two centuries ago. Rich men, however, are usually extravagant (from a normal standpoint); taxation of such men is also an important factor; there is hope that, in the future, more money will be forced into productive uses or will pass to the State.

The anti-social effect of large fortunes is intensified by the fact that "capitalists," as they are termed by the modern Marxists, often use their power to create artificial scarcity, mainly of commodities or capital. There seems little doubt that rich men can invest their money in ways which are deliberately anti-social; the best shares of rich companies tend to fall under the exclusive control of rich men. The natural scarcity of employers and of certain forms of labour should break down in the future, for education will provide a large class of potential employers; artificial monopoly has become a sinister feature in American trade, and shows signs of increasing significance in this country.

The present system of distribution has much to commend it. Perhaps it is the most favourable possible system in relation to production, under present conditions. The stimulus of pure profit to employers, and that of net product to workmen have a favourable effect on production; there is also a certain rough justice. Were competition perfectly free, it seems certain that the system would be still better, especially if combined with an intelligent regard for those men whose product will not earn them a living wage. The system has given us the most marvellous material civilisation the world has seen.

The defects in the system have led to the most shocking abuses; these were most marked about a century ago, unless we agree that the system was responsible for the world war. These defects have led to the most violent attacks on the system itself.

20. The term "Socialism" has now come to mean almost any form of dissatisfaction with the present system, but there are two main groups of socialists. There are those who are not fundamentally dissatisfied with the present system, but who would gradually mould it so as to obtain better conditions for the working classes as against landowners and employers, especially those who control much capital. If their general aim is to concentrate production and distribution in the hands of the State, they are called collectivists.

The other type is represented by the communists; these are so critical of the present system that they would destroy it completely, and replace it by some form of co-operation. Some of the most attractive and some of the most selfish of socialists have belonged to this group. The syndicalists in the early part of this century suggested the overthrow of society by the "general strike"; many of their ideas have been taken over by the shop steward

movement, and the guild socialists; the latter suggest a modified reversion to the mediaeval guilds, in which industry was controlled by the guild members; a building guild has been formed which is prepared to carry out building schemes. The high ideal towards which the better communists are striving is "From each according to his powers; to each according to his needs."

Communism seems at present to be an impracticable ideal; its failure would seem inevitable, until human nature has been so modified by moral forces as well as by industrial experience that men would sacrifice themselves for such an ideal. Already, however, it has stimulated various experiments of the greatest value and interest; they seem to show that an industrial community can be founded and can work, for a time, if the conditions are peculiarly favourable; sooner or later it is blighted by the selfishness of human nature.

21. The problem is best attacked piecemeal; almost every socialistic experiment falsifies the hopes of the promoters while it provides a valuable guide to further effort. Thus attempts have been made to bridge the gulf between employer and workmen by a system of co-partnership. The workman receives (usually) a certain wage, and obtains a percentage of the final profits. He is encouraged to invest his share of the profits, and thus become a shareholder; representatives of the workmen may also be given a voice in internal management. In those rare cases in which the experiment is fully successful, the result is an increased production, for the workman has a direct interest in his work; in a small business in which an intelligent employer has the full confidence of his men, the experiment often succeeds. When the men have no voice in internal management, the system is called profit-sharing.

**Co-Partnership
and Profit-
Sharing.**

One defect is that the workmen naturally object to sharing in losses.

22. Profit-sharing is suspected by the thoroughgoing collectivist, as being a palliative. **State Collectivism.** management aims at obtaining the whole of business profits. Consider the case of coal-mining; some mines are worked easily, producing a very large surplus over the net product of the marginal mine, which fixes cost to the consumer. The collectivist might argue that if the industry were State-managed, it could afford to consider total expenses when fixing price; the State could afford to sell at a little more than the average price, and still make a small profit, control over production and sale might be necessary, as the lower price would stimulate demand and raise marginal costs. Alternatively, the State could produce the same amount as would be produced under private ownership, sell at marginal cost, and apply the profits to relief of taxation. By either method, profits would be transferred from private owners to the people as a whole. The collectivists claim that this transference of future profits would be equitable, for marginal costs have increased owing to the needs of the community.

There are two objections to this argument; first, an employer, and even the directors of a company are more immediately interested in their particular business than would be a combination of men whose qualities make for efficiency in a Civil Service. Government by bureaucracy has the defects of company management in greater degree. An employer is ruined if he makes many mistakes, and yet a developing industry demands initiative; he is judged by results, and is displaced if he does not produce the right articles in the right quantity. The State must do so much work that it must do everything by rule and precedent; a State industry would almost certainly fall into

the hands of safe men who can do things moderately well, but who are temperamentally unfitted for the task of guiding industry into new directions. Experience has shown that in a buréaucracy the alert and enterprising man is discouraged; in competitive industry such a man explores new methods and may obtain results of the highest value. Such a man is to-day a benefactor to the community; if he makes a mistake, he may lose all, if he makes a real discovery, his work is liable to be imitated by less enterprising rivals to the advantage of consumers; it is such men on whom possible profits exert the greatest attraction.

Again, collectivism would probably have to dispense with a valuable index to the state of the market. We have seen reason to believe that, within limits, the price of a commodity when fixed by competition corresponds to a position of maximum satisfaction; the law is not absolute, but it seems probable that a chance variation from the market price is more likely to diminish than to increase total satisfaction. When a price, settled automatically, without trouble, presents such advantages as does the competition price, it should not be discarded lightly. Now State prices tend to be fixed by law, and are altered with difficulty; thus production may be much greater or less than is warranted by current conditions; in the former case, there is waste; in the latter, industries may be hampered or individual satisfactions needlessly checked.

The whole subject is fiercely controversial, and the precise degree to which nationalisation should be carried is a matter of individual opinion. Further, the concentration of large-scale industries into few hands may make competition impossible; when a trade has become a trust-owned monopoly, American experience seems to suggest

that some form of control is essential; the choice then seems to lie between State control and full ownership. Certain industries, *e.g.* the Post Office, are efficiently managed by a bureaucracy, and it seems that other trades which have become a matter of mere routine might be similarly owned. Each case should be judged on its own merits.

23. There seems to be a drift towards the nationalisation of certain industries. War experience will be useful, while the lessons learned during the control of the coal supply may markedly affect future policy. On the whole, it seems best to say that State ownership should be limited to those industries which are already monopolised, and ready to be taken over without change in essential method. Further experiments seem almost certain; it is highly important that they should be confined to the industries in which success is most probable; limited nationalisation may then be an important solution of many industrial problems. Under such conditions, nationalisation brings no essential change, for it would be applied in those industries in which competition had already given place to combination.

Competition has also been attacked in another manner, *i.e.* by co-operative societies. Co-operative stores have been remarkably successful; they consist of members who combine to form societies managed by elected representatives. The employer is eliminated, middlemen's profits are saved, and the result is that a society can usually pay a substantial bonus on sales; the members thus receive the profits themselves. Such societies have not only cheapened the goods used by the working classes, but have brought down the exorbitant prices often charged by shopkeepers in a village or small town.

24. Co-operation has been less successful in production.

Co-operation. It seems to provide no substitute for the entrepreneur; trades susceptible to company management may be successfully carried on, but in the production of ordinary commodities the moderate pay of a co-operative manager has not usually attracted the type of ability which succeeds in a private business. Perhaps the attempt to spread the work of the entrepreneur co-operatively among a number of men will in future be undertaken by guild socialism rather by co-operation in the old sense. The huge production of the C.W.S. should however be noted.

Future progress will probably be a growth rather than a deliberately controlled movement. Especially in England, the nation seems disinclined to experiment with a totally new social system; yet there is a movement away from the old capitalistic individualism. Each group of reformers has grasped a partial truth which, within limits, is being put into practice. State and municipality control, more and more, certain routine businesses; co-operative societies are meeting the entrepreneurs on their own ground. In these ways, the old system is being partially replaced by others which, in certain directions, have proved their superior worth.

Capitalism is still supreme over the greater part of the field, and it seems wisest so to utilise reforming energy as to direct it towards the reform of the prevailing system, rather than to its destruction; if it is essentially bad, it will be destroyed by the march of events.

25. The share of each man will tend to be increased if

Influence of total Product. the total product is increased; if all men redouble their efforts, the share of each will be greater. On rare occasions, a small group may temporarily improve its position by a "canny" policy; such action is anti-social, and will not

permanently serve the purpose even of those interested. Overwork is an evil; overtime may be equally bad; the deliberate withholding of a man's best work is a worse social evil than either. Again, the present distribution could be improved by sweeping away all barriers to equality of opportunity. Whenever a class holds a monopoly, natural or artificial, it obtains an unfair share of dividend. Education will probably have a great effect in abolishing the natural scarcity of employers and other fortunate classes; the wider diffusion of wealth is to be welcomed, for otherwise the possessors of capital will be in a commanding position.

The present system is based on our laws of property and inheritance; these encourage the growth of capital, but tend to increase differences in income. Super taxation and death duties may have valuable effects in redressing the balance; so far they tend to remove some of the vital objections to capitalism; such measures must be cautiously applied, or saving will be seriously checked.

REFERENCE.—*Marshall*. Principles.

CHAPTER XV.

DISTRIBUTION.—ECONOMIC ACTIONS OF GOVERNMENTS.

1. At the present day, the economic actions of governments are so much in evidence that the permanent effects of governments may be overlooked. Modern economic life, however, is absolutely dependent on the security of life and property (and incidentally on the enforcement of contracts); security seems to us to be a kind of natural right. It is actually obtained as a result of sustained effort made by men set aside for the purpose; this effort must be paid for, as judges' salaries, policemen's wages, etc.

The State aims at security, not because it increases production, but as an end in itself. None the less, the expenses can be borne out of no other funds than the national dividend. In the long run, the expenses of government must be borne by producers. As a matter of fact, the importance of security is so great that producers would be willing to pay for it if not otherwise obtainable; it seems probable that the payment necessary for individual protection would have to be far greater than it is at present. Thus, the State is entitled to a share in the dividend.

2. There is no exact means of calculating the service of the State to production, or even to the community at large. The number and quality of men employed in government ultimately depend on the opinions of the people expressed through representatives. If crime becomes a permanent menace, more policemen may be employed; if courts are overcrowded, there may be new judges or other salaried officers of the Crown. The system as a whole will be fairly closely related to the needs of the community, though the correspondence will probably not be so exact as in the case of competitive business.

The remuneration of officials will be decided in exactly the same manner as in the case of business; adjustment will not be so perfect, and a standard remuneration will tend to settle demand for posts rather than the converse; this, however, often happens in business. If the State or local authority obtains policemen easily, it may either retain the attractive wage and choose the best men, or lower the wage. The attractiveness of a particular government or municipal post will depend on the money wage, and on the estimated money value of the pension often attached. Such posts are also usually safer than business; dismissals are less common and wages are steadier. Again, there is often a social advantage attached to government positions, though this is less the case here than on the Continent. On the whole, a government can get its work done cheaply; again, much voluntary work is done free of charge. These considerations apply to most classes of government employment, central or local, and are not confined to cases where crime is in question.

Many governments consider that their economic work is not confined to prevention of crime, but that they have a duty to intervene in the economic life of the country, so as

to stimulate or control production or distribution. Such control is expensive, and the government must receive an increased share of the national dividend as remuneration.

3. No wise government would intervene in the economic life of the country unless the advantages gained were more valuable than the cost of intervention ; this assumes that moral advantages may be estimated in money terms. It is certain that much interference with trade has taken place solely for the purpose of pecuniary gain, and that this end has not been attained. The Manchester School of economists (the classical economists between Ricardo and Mill) held that government intervention in itself was bad ; that not only was the expense of intervention a pure waste, but that interference with industry must in itself lead to decreased efficiency.

4. The watchword of the Physiocrats had been “ *Laissez faire, laissez passer.* ” This expressed the desire of many merchants to make what they pleased without State intervention, and to transport their goods from place to place without vexatious restriction. Adam Smith continually points out that every man is the best judge of his own interests, and that the welfare of the country as a whole would be best forwarded by the removal of obstacles which government then placed in the way of trade ; he took governments as he found them, and could not conceive of existing governments as exercising wise control over industry. Economic Individualism was to him the essential condition of welfare. “ Every individual is continually exerting himself to find out the most advantageous employment for whatever capital he can command. It is his own advantage, indeed, and not that of the society, which he has in view. But the study of his own advantage naturally, or rather

necessarily, leads him to prefer that employment which is most advantageous to the society."

5. The doctrine of individual freedom was crystallised into a system by the Manchester School, and made to justify industrial crimes which would probably have been denounced by Smith; the leading economists were not completely carried away by the doctrine of the sufficiency of individualism, but callous manufacturers pretended to find in Political Economy a full justification of their brutality towards employees. The new, hard Individualism condemned the Factory Acts; the greater economists defended them, as Smith would probably have done in similar conditions.

The modern reaction against the Manchester School seems to many to have gone too far; under present conditions, there is a great deal of truth in the assertions that if a man is successful in his own business, he has performed a useful public act, and that a government which tries to control business is more likely to do harm than good. If an employer makes a large fortune, he has probably done so by making the right goods at the right time in the right quantity; if a doctor earns large fees, it is a sign that doctors like him are relatively scarce, and that the country would be pleased to have a better supply. An employer may make money out of undesirable goods, but governments are rarely more decidedly moral than the people they govern. The sound reasoning and general observation of the *Wealth of Nations* are not yet out of date.

6. It is true that the sphere of justifiable State interference is probably extending. Perhaps the State is most useful as a means of providing standards; this is positive work of great value; the laissez-faire formula does not preclude posi-

The
Manchester
School.

Usefulness
of State
Action.

tive government action, for it only seeks to discourage active interference. The State provides standards of weight and measure, of purity, *e.g.* milk, and of money. It may at some date provide an invariable money measure; in England it already prepares a periodical index number, which shows the variation of price levels; our various departments, *e.g.* the Board of Trade, supply useful information as to trade conditions. Government may intervene in labour disputes, may fix a minimum wage in certain industries; in past times, the wages of labourers were fixed by magistrates, and this function may again be undertaken by the State.

The State may provide the necessary capital for useful work which is on too large a scale or too inconvenient for company management, especially if there is any doubt as to financial success. Roads, bridges, etc., are usually constructed by government; they may absorb enormous amounts of capital, but the total satisfaction they offer is greater still. Again, the State can carry through schemes of afforestation, or construction of permanent works, while an individual or company would not care to wait for the financial return. So also a local authority may construct a tramway because it gives a high total satisfaction to the residents, though there may be a financial loss. The State may also give bounties to an industry, either because of its importance to the nation (*e.g.* food supply in time of war), to stimulate a growing industry, or to aid an undertaking which gives a high total satisfaction to the people, *e.g.* the subsidy to mails.

An industry may make a large profit at the public expense; a trust may so control a single industry that it obtains a monopoly; such an industry may be ripe for nationalisation. Marx seems to have been wrong when he foretold the increasing concentration of industries, so that

the time would come when the proletariat could step in and seize the productive system; his prophecy, however, is partially fulfilled, and as trusts become more prominent, nationalisation becomes a practical problem in an increasing number of industries. America has sought to control her huge trusts; Germany has put greater faith in nationalisation; the question of control or ownership of large-scale industries seems to be one of future prominence in this country.

The protection of new inventions has always been regarded as justified, not only because a man has a right to remuneration for his own creative work, but because inventions might not be forthcoming if they were not adequately rewarded; patents are the just reward to enterprise. More controversial is the detailed control which our government has exercised in late years. The activity in regard to sick and unemployment insurance, and to labour exchanges is not universally approved; government control over education and public aid is more widely accepted, though there is much criticism of detail.

Lastly, the State undertakes work which must be paid for out of the national dividend, but which cannot be said to lead to an improvement in the quality or quantity of production. The Army is the best example.

7. The positive merit of the Manchester School was that it led to the sweeping away of certain antiquated restrictive laws. Such were the Corn Laws. They may have stimulated agriculture, but, through their action on the cost of living they led to intense misery and to a loss of efficiency. Perhaps the best work of the classical economists was their fight against the old Protection.

The real case for Free Trade is simply stated. When

two men exchange commodities, we may assume that each obtains a surplus of satisfaction. There is no increase of material wealth, but it is more economically distributed. Neither party is obliged to barter; if both barter, both will gain satisfaction. This principle is not affected by distance or by national boundaries. If individuals barter goods, the case is as above; if goods are bartered for foreign goods, an English merchant would not obtain goods for which there was no demand in England; if permanently successful, he has correctly gauged the commodities most in demand.

Now trade between different countries is practically barter; if an English cotton manufacturer sends goods to Spain, he receives a promise to pay, called a bill of exchange. It will be seen later that such bills do away with the need of transferring money at each transaction. As a consequence, the value of the goods exported from England will, when all things have been taken into consideration, be equal to the value of the goods sent into England; this will be elaborated in a later chapter.

Now these goods will tend to go from a country where they are abundant to one where they are scarce. As before, there is no increase of material wealth when exchange takes place, but the traders in each country obtain increased satisfactions. Oranges may be abundant in Spain, while cotton goods are easily and cheaply made on a large scale in this country; the marginal utility of oranges may be low in Spain, but high in England, while the reverse holds good for cotton. Thus large numbers of oranges may be sent to England in exchange for large amounts of cotton goods, in such a proportion that each country is well satisfied by the process; individual traders reflect the desires of their customers, and it is probable that if the individual traders are satisfied by an exchange,

such exchange will, as a rule, be beneficial to their country as a whole.

8. Differences in natural productivity are common ; the economies of large-scale manufactures tend to localisation ; thus, every country holds certain goods in superabundance, and is sorely in need of others ; hence the sum of human satisfactions is increased by international trade. Again, if a commodity is naturally abundant in a country, it is probable that this country possesses peculiar facilities for growing or making it ; the same arguments for division of labour within a country hold for the distribution of industries between different countries. It is hardly doubtful that human satisfaction is normally maximised by a full utilisation of national advantages for the production of particular commodities, if trade is free and open between different countries. It is plain that Spain should exploit her advantage for orange growing, and England that for cotton manufacture ; the argument holds also in cases where the differences in productivity are less striking. Even when one country can do all things better than another, it is most probable that trade will flourish, if communication is easy ; the efficient country would satisfy its wants most efficiently by applying its available capital and labour to those branches of production which would give the greatest return, *e.g.* those for which the country was initially suitable and were subject to increasing returns ; its other wants could then be met by giving its excess produce for things which it could have made cheaper than the country from which it is buying them. Many goods are bought from foreign countries which could have been cheaply made at home ; they would, however, require the application of labour and capital which is now put to still better use.

Free Traders assert that all attempts to interfere with the natural development of production and trade will defeat their ends ; Protectionists believe that certain industries should be sheltered behind a tariff wall, lest they are killed by foreign competition. Free Traders cannot deny that such Protection may aid a particular industry ; they do insist that such a beneficial result will be more than balanced by a sacrifice at another point of the economic structure.

9. The Free Trade argument is immensely strong, but it is so vague and general that the contro-
Protectionist versial Protectionist has little difficulty in
Fallacies. presenting special cases which are not easily countered by the general argument ; where a fallacy exists, it may always be exposed, but a Free Trade answer to a special Protectionist argument often appears laboured ; in such a case, the Free Trader defends his position by making the subject more intricate.

In the case of the Protectionist Corn Laws, the task of the Free Traders (the Manchester School) was comparatively easy. Foreign corn was subject to a heavy duty ; this was reflected in high prices, and the misery of the lower classes was a sufficient argument against Protection. The expectations of the classical economists that all the world would follow our example were falsified. Most foreign nations returned to Protection ; they deliberately strove to stimulate their industries by means of tariffs.

To an extreme Free Trader, such action was incomprehensible ; he had exposed the fallacies of the old Protection so successfully that he was impatient with the new protectionist school who relied on fresh arguments. Many economists have assumed too readily the viciousness of tariffs.

Adam Smith fought a type of Protection based on crude

ideas which have not yet quite disappeared. Men believed that imports drained the country of bullion, and that exports were desirable because money was brought into the country to pay for them; Smith combated the crude fallacy that wealth was synonymous with money; he showed that money was useful only so far as it bought desirable goods. His argument against "restraints upon importation" is similar to the general argument outlined above; he showed that the free importation of desirable foreign goods was likely to stimulate a corresponding export.

Smith, however, defended the Navigation Acts, which aimed at the protection of British shipping, on the ground that "defence is of much more importance than opulence." He showed also that when an internal excise duty existed on a commodity, it was only just that a corresponding customs duty should be made on the imported article.

10. The argument of those who believed that protection would make a country wealthier by stopping the drain of gold gained apparent support from the idea that home trade is more valuable than foreign, for the cost of transport is saved. The fallacy is obvious; a merchant would not choose foreign trade in preference to home trade unless his gains sufficed to pay for the cost of transport; the fact that trade does exist in spite of this handicap is only another proof of the beneficial effects of international trade.

11. Mill was a firm believer in Free Trade, but he showed that under certain conditions, protection might be useful. A fully developed industry can stand alone; a developing industry may not obtain a footing unless it is aided at first. An industry may be thoroughly suited to a given country, but the initial risks, difficulties, or expenses may be so

Home and
Foreign Trade.

Infant
Industries.

great that it will make way slowly, if at all. If it is protected against foreign competition by a tariff on the goods produced, it may develop behind the tariff wall, and then dispense with artificial aid. The practical application of this principle is very difficult; it is far easier to begin a tariff than to remove one, for the vested interests favoured by a tariff are strong and usually well-organised. Many German and American economists who believe that protection has accelerated the development of "infant industries," especially those subject to increasing return, now hold that the time has come for tariff reduction.

12. The protectionist policy of the later nineteenth century was supported by another argument which carries some weight. Just as division of labour may lead to over-specialisation, so may complete freedom of trade. One country may become exclusively agricultural, another manufacturing, and so on. Protection may redress the balance; a country may be willing to sacrifice a little material wealth, either for the sake of security of supplies in war time, or for the desire for a well-balanced economic life; an industrial nation might conceivably be starved into surrender.

13. Those who wish to introduce protection into England often admit that Free Trade will benefit the world as a whole, but believe that one-sided Free Trade is disadvantageous for us. They point to the high wages of protectionist countries, but, where these exist, general prices are also high. They object to the dumping of cheap goods from other countries; such cheapness, however, may aid the home consumer more than it hurts the producer, and often dumped goods are made the basis of further manufacture. They believe that a protectionist nation obtains an advantage over a Free Trade country, though the people taken internation-

**Over-speciali-
sation.**

**One-sided
Free Trade.**

ally would gain if tariffs were abolished; against this it is argued that the latter country would suffer a further loss by imposing a retaliatory tariff. Many believers in Free Trade support such duties, however, in the belief that the original tariffs will be forced down.

14. The general argument of Adam Smith suffices to meet most of the arguments of the protectionist. It fails where considerations other than economic come into force, as Smith himself saw in the case of national safety; on purely economic grounds, a case may be made out, from a national standpoint, for the protection of industries subject to increasing returns. The protection of developing large-scale industries in America did much less harm than that of corn in this country.

The convinced free trader allows of no exceptions; he points out that most wars are economic in origin, and that tariffs breed hatred. He denies that protection will lead to a more balanced development, unless at great sacrifice of total production; if an essential industry is threatened, he would prefer a direct subsidy to a protecting tariff, for the nation then knows the price it pays for the desired object. He criticises the protection of infant industries, for if an industry were suitable, it would certainly develop sooner or later without help; a tariff is simply a gift to the manufacturers which is apt to become a vested interest.

15. The subsidiary arguments of free traders so powerfully support the main argument that it seems plain that tariffs should never be imposed without the strongest possible reasons. Through rise in prices they weight the scales against the consumer, and protect a class who will be the more able to exert a corrupt influence on the tariff-making body, *e.g.* a government department. They

Failure of
general Free
Trade argument.

Further
objections to
Protectionism.

lead to an unnatural arrangement of firms and industries. Inefficient firms (and industries) are kept in existence; efficient firms may fail if they have to pay highly for protected raw materials, etc., while their own products are not protected; corrupt incompetence may flourish. Again, capital and labour are attracted from more competent businesses, to be used in a business where they obtain an artificially high return at the expense of consumers; an artificial stimulation of one industry must lead to depression in others unless there are important (and unlikely) secondary effects. Lastly, the bracing effect of competition, to which much modern development is due, is liable to give place to a slow degeneration behind a sheltering tariff wall. From the world standpoint, as distinct from the national, the argument for protection is insignificant. Yet, free traders have probably often erred in over-estimating the evil effects of tariffs.

16. The work of the central government, necessary, beneficial, or dubiously useful is mainly paid
Taxes and Rates. for out of taxes. Local authorities usually levy rates; in this case a rough estimate is made of the sum of money which is required, and the amount payable by each person rated is defined by the rateable value; a man's land (say) is rated at £20 and he will pay £10 if the rate stands at 10s. in the pound. A tax is laid on a commodity, transaction, etc., and it may usually be evaded by any person who does not buy a particular commodity; thus the amount of a tax can usually only be estimated. Again, some payments to taxing or rating authorities are of the nature of direct payment for benefits received, *e.g.* in the case of a city tramway, a State railway, or telegraph service. In most cases, there is no such exact relationship between payment and benefit.

The payment for special purposes, *e.g.* tramways, cannot

be fully considered here; it is enough to say that there are all gradations between the city (say) which wishes to make a maximum profit out of its monopolised tramway system and that which works it permanently under cost, so that the consumers' benefit enjoyed by those who use the trams much more than counterbalances the total financial loss; thus it is expedient that roads, bridges, schools, water supply, etc., should be supplied free of cost.

Neither can miscellaneous payments be considered; such would include items such as fees and the rents of government-owned land.

17. Our problem is to find the general principles on which the total burden of taxation should be shared among individuals. Taxes and rates cannot pretend, as a rule, to fix the cost of State services at the level they would reach under free competition; in unsettled times, a rich merchant might pay a high price for safety of person or goods, and each form of service might be assessed at a money price in this way; rich merchants would compete for retainers and their cost would be governed accordingly. The State controls many such activities which it is not desirable to leave to competition. Yet the State cannot estimate the relative worth of services to individuals even to an approximate accuracy. Under the present rough systems of taxation it inevitably happens that some men pay large sums of money for services which other people receive, while others receive what is practically a free gift from the State.

Adam Smith believed that some measure of service received was measured by a man's income. It seems better to avoid the attempt to obtain payment for services rendered; there is a modern tendency to regard a State more and more as a single unit; State action which leads

**General
Principles of
Taxation.**

to a greater total happiness or to a fairer distribution of desirable things receives wide support. The rich man has obtained his wealth under the protection of State laws and as a consequence of the abundant productive life around him. Thus it is increasingly felt that the community as a whole is responsible for the removal of the meaner and more distressing blots on the social system.

18. A perfect system of taxation would lower the burden of taxes to a minimum consistent with efficient government, and also divide taxes equitably among individuals. The four canons of taxation found in the *Wealth of Nations* may still be read with great profit. Smith's principles may be summarised as equality, certainty, convenience, and economy.

1. "The subjects of every State ought to contribute towards the support of the government, as nearly as possible, according to their respective abilities; that is, in proportion to the revenue which they respectively enjoy under the protection of the State. . . .

2. The tax which each individual is bound to pay, ought to be certain and not arbitrary. The time of payment, the manner of payment, the quantity to be paid, ought all to be clear and plain to the contributor, and to every other person. . . .

3. Every tax ought to be levied at the time, or in the manner, in which it is most likely to be convenient for the contributor to pay it. Taxes upon such consumable goods as are articles of luxury, are all finally paid by the consumer it must be his own fault if he suffers any considerable inconveniency from such taxes.

4. Every tax ought to be so contrived, as both to take out and to keep out of the pockets of the people as little as possible over and above what it brings into the public treasury, in the four following ways. First, the levying

The Canons
of Taxation.

of it may require a great number of officers. . . . Secondly, it may obstruct the industry of the people. . . . Thirdly, (there are) forfeitures and other penalties. Fourthly, . . . it may expose them to much unnecessary trouble, vexation, and oppression."

To these maxims may be added two others: a tax should be productive, *i.e.* a large revenue should be obtained in a way that involves no crushing burdens on individuals; a tax should be elastic, *i.e.* it should be an easy matter to vary at will the amount obtained; thus a 10 per cent. increase should be obtainable by a known rise in the rate.

19. Taxation is essentially a matter of compromise; all the maxims cannot be followed at the same time; good taxes may contravene one or more of the maxims. There is often an attempt to arrange the whole taxation system so that rough justice is achieved; individual taxes may be bad but they may be so combined as to neutralise each other's deficiencies, at least in part. The objects of taxation are diverse, and call for different methods of collection and assessment; thus a land tax must present features which are not found to so great an extent in a tax on commodities. The latter is a more convenient tax, but it is often less economical.

If we assume that State expenditure aims at the welfare of the community as a whole, it is likely that the State will have some such aim as is given in Smith's first canon. The Faculty Theory of taxation is in some form accepted by most economists but the meaning given to the term "ability" to pay varies; further, it is no longer supposed that a man's "revenue" is a measure of the services he receives from government. Stress is now laid rather on sacrifice than on ability in an objective sense.

It seems as if a percentage rate on all incomes on property would result in equal sacrifice; further examination

shows that this is not the case, even if individual preferences are neglected. There is a minimum income required for continued existence, and another minimum for the accepted standard of living. It is just that the minimum for a tolerable existence should be exempted from taxation; the exact position of this may be a matter of argument, but its existence should be assumed. This principle has been adopted in our income tax.

20. Even when taxable incomes are subject to such deductions, it remains true that the normal man who pays £1,000 on £10,000 (measured above the minimum) sacrifices far less than he who pays 2s. on 20s. excess over the minimum. The Law of Diminishing Utility holds strongly in relation to income. The wants of a poor man are urgent, while the rich man has few compelling wants which require money for their realisation; if the former loses a tenth of that part of his income devoted to comforts, he normally sacrifices more than the other who loses the same proportion. Thus the highest incomes should not only pay a greater amount, but should pay a higher rate. This principle is also put into practice in our income tax; the super-tax on large fortunes promises to be a permanent part of the taxing system. There is the greater need for such a "progressive" income tax in that much taxation falls with greatest weight on the poorer classes, *e.g.* taxes on tea and tobacco. The Death Duties afford a successful example of progressive taxation.

Thus the productivity of a tax must often be sacrificed to equity. A tax on corn would bring in a great deal of money, and might yield a large proportion of the total revenue; the attempt to "broaden the basis of taxation" is made by men who wish to obtain more money from the poorer classes; such taxes involve great sacrifices on the

part of poor men. Many single taxes may rightly fall heavily on the poorer classes; care should be taken that that whole taxing system, including local taxation, should be equitably arranged. There is no means of defining exactly the rate which should be paid by each person; we can only estimate very vaguely the amount of pleasure obtained by each successive increment (say) of £100, and so the rate at which super-taxation is assessed will vary with current ideas and with political conditions.

21. The canons of certainty and convenience are often contradictory, at least in part. There is a **Certainty and Convenience.** broad and useful distinction between direct and indirect taxation. Direct taxation is imposed on those persons who are intended to bear the ultimate loss; thus the income tax is a direct tax. Taxes on commodities like tea and tobacco are indirect, for the consumer usually bears the greater part of the burden, as he is meant to, but the dealer must pay the tax in the first instance. In past ages, uncertainty in regard to taxation might be a great evil; Smith believed that "a very considerable degree of inequality is not near so great an evil as a very small degree of uncertainty." To-day, there is no fear of the tax gatherer in himself, for he is only the vehicle through which State commands are carried out, and he can no longer practise extortion on his own account. For this and other reasons, the uncertainty which was formerly so great an evil has almost disappeared. To-day, the income tax is so clear, so certain, and so definite in the manner of payment that most men prefer another type of taxation.

22. Indirect taxation has many advantages; it is usually **Indirect Taxation.** more convenient than direct taxation, though often less certain in the amount to be paid. An indirect tax automatically sifts out those to whom the

tax in question would be peculiarly inconvenient; such persons may usually avoid it altogether by refraining from purchasing the articles in question. The average purchaser of tea or tobacco can purchase these commodities when and in what quantities he pleases, and thus pays the tax at his own convenience and in the amount he himself chooses. Further, the purchaser rarely knows what proportion of the purchase price is paid as a tax, and so the tax is not thrust on his notice; a man may obtain a high consumers' rent from his tobacco, and he will then willingly pay a higher price rather than do without; if the tax is hidden by being absorbed in the purchase price, it is paid with less reluctance by the normal man. The quantity paid is not "clear and plain to the contributor," but this is an actual advantage. The State obtains a large revenue, and each individual practically taxes himself.

Indirect taxes, however, often contradict Smith's fourth canon; they are often expensive to collect and they must interfere to some extent with industry. It is often argued against a particular tax that it destroys capital and thus damages industry; all taxes, however, must have this effect, and the State calculates that the use to which it puts its revenues more than compensates for all the various losses occasioned. Such losses should be reduced to a minimum; when possible, a tax should be inexpensive in collection, and displace as little capital as possible, while the method of collection should be simple and direct; the necessity for a large number of officials will greatly decrease the net return from a tax. Thus a taxing system which consists wholly of indirect taxes is wasteful.

23. A State will aim at putting customs or excise duties on those commodities the demand for which is inelastic, else the productivity of a tax will be reduced through

shrinkage of demand. If a tax is put on a commodity subject to elastic demand, a large proportion of consumers' surplus will be lost through evasion of the duty consequent on the cessation of buying; the traders will also suffer; the revenue will gain far less than the country loses; the same result occurs when an article which is made according to increasing return is heavily taxed. In nearly all cases of taxes on commodities, however, the amount received by the Exchequer is less than the money valuation of the total loss caused. If, however, the tax is an import duty, it may be that under certain circumstances, the foreigner will pay the bulk of the tax, for if demand for the commodity is elastic and the supply is inelastic, the price will hardly rise at all; sometimes a nation may thus obtain a revenue greater than the sacrifice entailed. A clear distinction must be made between protective duties, whose aim is to prevent competition by keeping out foreign goods, and simple customs duties, whose aim is to provide revenue. If a protective duty yields a large revenue, it is failing in its primary purpose. When, however, demand is inelastic and supply is elastic, price is forced up nearly to the level of the old price plus tax (*i.e.* the consumer pays), the home producer puts up prices to the same level and increases his profits at the expense of the consumer. Thus it is not normally possible to make the foreigner pay nearly the whole of the duty and at the same time to protect the home industry effectively.

A nation may sometimes benefit by more than the total cost of a tax in another way. It may stimulate effort and invention; this may be especially marked in the case of a tax on raw materials, for a manufacturer may be encouraged to make the fullest use of them. The German tax on beet was a good example; the manufacturers tried

to obtain the maximum quantity of sugar from a given quantity of beet, and the effect on the sugar industry was very beneficial; had the tax been laid on sugar, there would not have been this incentive to production.

24. The partial payment of a tax on a commodity by the consumer is an example of the "shifting" of taxation; if the tax is completely shifted to the consumer, the "Incidence" of taxation is said to fall on him; the marginal theory may be worked out as if the tax were an increase of cost of production.

Consider now a tax on economic rent. There will be a marginal piece of land which pays no rent and therefore no tax, and as no change in demand is supposed, it is still just profitable to work land which was worked before the tax but which bore no rent. It is therefore profitable for the other owners to continue working the land (or letting it at the old rent) as long as the tax does not absorb all the surplus. Thus the same amount of produce will be raised as formerly, on the same land in the same amount. Those who formerly obtained a surplus will simply lose part of it. The owner cannot pass any part of the tax on to the tenant, for, if he tried, the latter would do better to take in land which bears no rent and is not taxed. "A tax on rent would affect rent only; it would fall wholly on landlords, and could not be shifted to any class of consumers" (Ricardo). This of course does not apply to actual rent, which contains an element of profits.

Similarly, the incidence on any form of pure rent, *e.g.* rent of ability, is on the person who actually pays the tax; a tax on quasi-rent follows a similar rule, but in this case the tax might ultimately be shifted. Thus if a manufacturer earns excess profits because he uses new patented machines, and if these excess profits are taxed (as being

derived from such machines), then the maker of the machines would have to lower his prices or be content with a smaller sale of new machines. The same effect would occur if the machines were taxed according to the number used by a firm; in the long run, but not immediately, some of the tax would fall on the machine manufacturer, or else his production would shrink. From a long period standpoint, it would not be very different if the tax were directly levied on the machine manufacturer, for he would shift part of the tax on to the machine user, the proportion being fixed by conditions of demand and supply.

25. A tax on monopoly revenue is not shifted; it is —On Monopolies. supposed that the monopolist has already arranged his output so as to obtain the greatest possible net revenue. If this revenue is taxed, say at 10 per cent., it will be to his interest to retain production at the old level; if his revenue is greatest at a certain output, nine-tenths of his revenue will be greatest for that same output. Marginal demand has not altered, and thus the consumer will pay the same price as before, but ten per cent. of the monopoly profits must be paid as tax; the tax remains on the monopolist. The same thing will happen if the tax is a lump sum, irrespective of output or price; if the same tax is taken from a number of amounts, the amount which was the largest at first will remain the largest. A tax on output, however, will limit output; the production will fall to the point at which the loss due to lessening of net revenue is balanced by the saving of tax on the smaller output.

26. A tax on wages in a particular trade or area will be —On Wages. partially evaded sooner or later; labour will move from the place or the trade which is taxed; labour will there be scarcer; marginal product and hence wages will rise nearly as high as elsewhere (p. 286).

The same holds good for a sectional tax on profits or interest, for capital is at least as mobile as labour. A tax on general wages is not so easily evaded.

If the iron law held, the incidence of such a tax could not fall on the labourer, for he already obtains the bare minimum required for subsistence; under these circumstances, a tax would be completely shifted and would fall wholly on profits. In practice, such a tax would not be wholly shifted, and there are circumstances under which it would hardly be shifted at all, *i.e.* if the supply of labour was inelastic and the demand was elastic. If, however, the lower net wages decided many workmen to retire, or to set up independent businesses, the marginal product would rise, wages would also rise, but profits would fall, partly through decreased production and partly through higher costs. Thus, the tax would be partially shifted. Similarly, a tax on general profits is partly shifted, not only on to the consumers, but also on to wages.

27. A tax on the value of land (including buildings, etc.)
 —On Land. or on the annual rental (including payment for buildings, etc.) has complicated effects; the landlord will shift more or less of it on to tenant or consumer.

A tax on corn would be shifted to the consumer if the demand were quite inelastic; in practice, demand would shrink when the tax was added to market price; thus land would be thrown out of cultivation, and marginal expenses fall (because of diminishing return); thus price will rise less than the amount of the tax, but landlords will receive less rent. Goods made according to increasing return will rise in price by more than the amount of the tax, for marginal cost is increased.

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CHAPTER XVI.

MONEY.

1. In the preceding chapters the notion of money price has been continually considered as if it contained no inherent difficulties. To most men, it is as easy to measure price in terms of the coins in common use as it is to measure distance in (say) feet, weight in pounds, or time in minutes. Every one knows that somewhere there is a piece of metal whose weight is a pound; every man has a rough conception of what a pound means to him. Whatever else varies, the ordinary man keeps unchanged his ideas of the common weights and measures.

In just such a way does the ordinary Englishman consider the shilling to be an invariable standard; in that way he formerly regarded the sovereign, but the disappearance of the familiar gold coin has given him some cause for wonder; none the less, he has merely lost a familiar landmark, and obtained an unfamiliar one in its place. There have been strange price movements, but the shilling remains the link with the past; just as a balance will record different amounts of commodities at different times so the ordinary man finds, with more irritation than surprise, that his shilling obtains different amounts of commodities at different times. He would not understand the possibility of a change in his standard, any more than

he would believe that the government standard of weight is continually varying; in the same way the occupant of a railway carriage appears to be at rest, while the landscape flashes past him.

In normal times, for most purposes, it is sufficient to assume that money is as invariable a standard as is the second or the foot; just as the relative movements of different objects on board ship take place as if the ship were at rest. To the steersman, the motion of the ship itself is always of interest, as it is to all the passengers under certain conditions; so the financier is always interested in money, in itself, and occasions arise when the subject of money is so far in prominence that all men are affected by the vagaries of the money standard.

The function of money can be understood only after a thorough comprehension of the processes of barter. The child knows that it can carry out its ordinary movements in a railway carriage, but only a mathematician can explain why this is possible. Money developed out of the need for a simplification of the processes of barter; money is so much a part of civilisation that it needs a real effort to understand its relations to economic life; our view of money is one-sided, for it has become our only standard of value of commodities in general.

2. Barter is a most inconvenient method of exchange.

Inconvenience of barter. If a savage has too much fruit and wishes to obtain hunting implements, he can drive a good bargain if he finds a man who has too many implements and desires fruit; this "double coincidence" is, however, very unlikely of attainment. Sometimes a system of complicated barter is effective; a man may give his surplus fruit for another commodity for which he has no personal use but which he can exchange for what he desires. There may be commodities like cattle

which every man is ready to receive as payment, for they can be readily exchanged when desired.

The other great disadvantage of barter is that the units of exchange may be of an inconvenient size. Double coincidence may exist between two bargainers and yet an exchange not take place; thus one man may desire a horse and the other a sheep and both be willing to trade; one man may demand more than two sheep for a horse, but the other will not give three, and thus there is no exchange; if a sheep had been divisible, a payment of two and a half sheep for a horse might have been satisfactory to both.

This is the great disadvantage of cattle as a measure of value; it can act as an intermediary in exchange only in those cases where the value of the wares is very large compared with that of cattle. The difficulty might be surmounted by making up differences in value by means of less valuable articles but with the development of trade arose the necessity for an intermediary of smaller value.

There is no doubt that cattle have been extensively used as a medium of exchange and also as a standard of value. Thus men kept cattle because, among other uses, they could be exchanged for commodities; they served as a medium by which superabundant goods of one kind could be exchanged for an article in constant demand which in its turn could exchange for the goods desired. Also, the values of goods could be compared if the value of each was known in terms of cattle. Cattle might obtain a slightly higher value through their usefulness in exchange, but remained a commodity, differing in no essential from other commodities which were not used as media of exchange.

The use of salt tablets, of ivory and similar articles provided a more convenient standard; these units being of smaller value, the value of commodities could be estimated

more exactly. The use of cowry shells marks a further advance in this direction, and these have a further advantage in that they are presumably of equal value; cattle vary in value among themselves, and their usefulness changes from time to time. Such shells may be taken as the type of a natural primitive money.

3. We may suppose that the collection of shells involves some trouble; if the shells used as media of exchange are present in abundance, men will satisfy their wants by collecting shells and exchanging them for food instead of producing it themselves, unless there is some obstacle to such a procedure; in practice, it will probably happen that the shells are comparatively rare, or else that such quantities are required for a small purchase that most men will prefer to satisfy their wants by direct production rather than by the collection of the medium of exchange. Thus the shells will obtain a value due to their use as a medium of exchange; they will probably be desired as ornaments; in any case, the comparative difficulty of collection will make them desirable, and their possession will give the same kind of pleasure as will the ownership of other goods. Thus these shells will be ordinary desirable commodities, like ornaments or implements.

It is plain that if shells are very abundant, they can possess little value; if many are still unappropriated, no one will give many desirable goods for a few shells which he can quickly collect himself; even if they are all appropriated, the average person will have so many that the same result will follow; using modern terms, the marginal utility of shells is low. If shells were suddenly to come into being as standards of value, they would be collected up to that point at which the marginal hour's work spent in collecting would give the same product (indirectly) as

the last hour spent in direct production (this of course assumes frictionless conditions not realisable in a primitive community).

Thus, the more abundant are the shells, the lower is their value, and the larger the number required to be exchanged against any particular commodity. It should be noted most carefully that there is no difference between the determination of the value of the shells and of any other commodity; if sheep multiply while horses are carried off, the number of sheep given directly in exchange for a horse will rise; if a new stock of shells is discovered, more shells must be given in exchange for other goods. Thus it follows that if other things do not change, an increase in the number of shells will diminish the value of shells and raise the value of other things in terms of shells.

In a community where shells are used as a medium of exchange, they will probably have an alternative use as ornament. Civilised peoples prefer ornaments of gold and silver; the precious metals everywhere possess a high value for this purpose alone. Very valuable articles cannot easily be bought and sold in terms of shells, for a colossal number would be required; thus a developing community must use a medium of exchange more desirable in itself, *e g* one of the precious metals. Metallic money is a natural development out of previous standards.

4. It may now be realised that our modern money is a true commodity, differing in no respect, say, from furniture or precious stones. Most men believe that money is in some way different from other things; it is not different, for the properties which are dominant as regards money are latent in all commodities. The value of gold is governed in the same way as that of corn or cotton; in the long run it tends to equal its cost of production. If the world's stock

**Money a true
Commodity.**

of gold were suddenly lost, the product of the mines would attain a greatly advanced value, just as the price of coal would soar if the stocks already hewn were suddenly destroyed. Men would offer a larger quantity of desirable goods for an ounce of gold, that is, a smaller quantity of gold would purchase the same quantity of goods.

Gold appears to occupy a special position because the price of commodities is stated in terms of money, and the converse is rarely true; occasionally an article may be sold at the rate, say, of five for a shilling, but the buyer instinctively thinks of the goods as about $2\frac{1}{2}$ d. each. It is very difficult to imagine that a certain amount of money has a definite value in terms of goods; it is easy to grasp the idea of the price of a pound of fruit; it is difficult to grasp that of the number of pounds obtainable for a shilling (especially if the number is not exact), unless the price per pound has first been taken as a basis.

5. Silver and gold are metals which have obtained universal favour as a result of their suitability for all the purposes for which money is used. The uses of money as a medium of exchange, as a standard of value and as a common denominator have been considered. In addition, a good money should make it possible to "store" value, *i.e.* to provide a sum of money which can be put aside till needed, and then be used to purchase any desired commodity; a perishable commodity might possess great value, and for some purposes might be used as a medium of exchange or a standard of value, but it could not be used as a permanent store of value.

Again, a good money can be used as a "standard of deferred payments." "Money is a form in which capital is held *in suspense* without loss. . . . Money is never 'second-hand'; it will always fetch itself, and it loses

nothing by keeping. . . . Cattle are good enough for present bargains, but not for the forward- and backward-looking calculations of profit and loss" (Bagehot). If a man owes £100, the lender should feel that the money he receives when he is repaid will compensate him for the money he originally paid. In times of rapid price movements, even gold and silver prove unsatisfactory measures of deferred payments; when prices are rising, the lender receives less value than he gave, and *vice versa*. Corn might be a useful measure of deferred payments over long periods, but in short periods, the seasonal variations would make it a bad measure; if a man lent a quantity of corn in spring, he would not be compensated by the repayment of an equal amount after the harvest, when corn falls in value as a result of abundance.

6. In order that a money shall perform all the functions enumerated above, it must possess various attributes. The first condition is that of *general acceptability*. Cowry shells could not serve as money in a progressive country, because no one would accept them in payment for valuable goods; it has been seen that acceptability requires an alternative use of the money material. The next condition is that of *divisibility* without loss; cattle and other animals lose much of their value when divided, and this loss may be even more marked in the case of precious stones; some stones lose most of their value when cut. With this may be coupled the need of *cognoscibility* and *homogeneity*; by the former is meant the easy recognition of the quantity and quality of the material in question; by the latter is meant the similarity of each portion of the material in bulk. Thus a graded sample of corn would fulfil these three conditions; the quantity could be easily found by weighing or measuring, and the quality is given by the

**Attributes of
a good Money.**

grade; any proportion of the whole could be obtained by the same process, and the sum of the separate parts would be as valuable as the whole, while every portion would be of the same value as every other portion having the same weight. Ornaments and other works of art would have none of these advantages; in their case, the whole is more valuable than the sum of the separate parts.

An essential condition is that of *transportability* without depreciation. Delicate or perishable articles might be used as a temporary standard in a limited area, but a money in use throughout a country must be capable of being easily carried from place to place. Portability is another requisite; coal cannot be a good international money because, among other reasons, it is too bulky, *i.e.* a comparatively small value of coal is heavy and takes up much space; the value of such a commodity will vary greatly from place to place, because transport costs are large in proportion to the original cost. A good money also is easily transferred from hand to hand; if articles are immovable or awkward to handle they cannot be extensively used as a medium of exchange.

The next condition of a good money is that of *storability* without loss of any kind. A herd of cattle will increase in value if "stored" and allowed to multiply, but it needs constant attention. Most goods depreciate by keeping; those commodities which are quite unaltered by being stored make the best standards of payment. The ideal money would be imperishable and unchangeable.

Lastly, there is the important condition that a perfect money should possess *fixity of value*; this condition must be carefully distinguished from the last. An imperishable article might change in value if the quantity available increased, though its value would not rise unless alternative uses for it were developed, or part of it were stored away.

Even if its amount were constant, its value in terms of other commodities would change as the supply of other things changed; this change in relative value should, however, be distinguished from that due to the change in supply of the available money.

7. The precious metals fulfil all these conditions except the last, at least as compared with most other commodities; there may be substances which fulfil certain conditions better than these metals, but they do not fulfil all the conditions as well as gold and silver

**Advantages
of Precious
Metals.**

Gold is generally acceptable for its own sake; it is practically untarnishable and does not rust, while it can be worked with ease; it is put to many uses in the arts, and would be put to many more if it were less scarce. Silver is less desirable, for it tarnishes more easily, but its beauty renders it generally acceptable, though its comparative abundance lowers its exchange value, it is, however, not so abundant as most of the commodities whose value it measures.

Silver and gold are each divisible without loss; the value of a ton of metal is hardly different from that of twenty separate hundredweights, for small pieces of metal can be easily melted, wood or cloth is not so easily divisible, for small pieces will be left over which are almost useless. The quality and quantity of precious metals may be estimated without difficulty; metals may easily be weighed, and assaying is not a very troublesome process. It is the easier in that metals are markedly homogeneous; if it is known that a lump of metal is the same throughout, it is sufficient to test a small portion.

Metals are transferable in the sense that they are easily moved from place to place, and are not awkward to handle. Gold and silver are also portable; a great value

can be packed in a small space, and thus can be transported cheaply, the main cost being that of insurance. These metals can be stored indefinitely without loss; their resistance to rust gives them an advantage over most metals; humanly speaking, they are practically imperishable. Further, when they are worked up into ornaments or coins, they regain their original condition on melting; when alloyed with a baser metal their isolation is not difficult. Physically speaking, a store of silver or gold is the same after long keeping, though its value, economically speaking, may alter.

8. The value of gold and silver is not immutable, but this disadvantage holds good for every other
Stability of Value. single commodity. Many attempts have been made to obtain a substance whose value is so stable that all other values may be obtained in terms of it, but there has been no success so far. In addition to the large seasonal variations in the value of corn, there are smaller variations from age to age; corn may be a standard of the greatest assistance in regard to some economic problems, but it cannot be a permanent standard, though the secular variations in its value are often less than those of gold or silver. Human labour is another standard which, estimated in the appropriate manner, is less variable than gold or silver, but its practical usefulness is not great in this connection; even if all commodities were made by manual labour, the differences in efficiency between different men would make the standard difficult to apply, and as it is, the use of the standard is not feasible.

The value of gold is far more stable than that of perishable articles; it is true that its annual production varies greatly, and that on some occasions new goldfields are opened out which are the cause of a large addition to

the stock of gold in use in the world. Yet, the wear and tear of gold is so small that immense stocks of metal are in permanent use; the annual production also is so small compared with the total stock that a single year's production hardly affects the value of gold. The marginal utility of gold does alter continuously, but the effect is marked only when the lapse of years makes plain the cumulative effect of the small annual changes. The same remarks apply also to the case of silver.

The precious metals do not fulfil the requisite conditions perfectly. The cost of transport of gold is small compared with its high value, but it is not negligible; it is very portable, but its use as currency entails a little inconvenience. A well-to-do man finds it inconvenient to carry much money on his person, and the hoard of a man who (in mediaeval times) saved money for emergencies might attain inconvenient dimensions. A new type of money has developed which is more portable even than gold.

In early times it was essential that the medium of exchange should be a commodity in common use, for the sale of an article was at first a species of barter; if cattle were the medium, men who possessed large stocks of other commodities would desire cattle for their own sake; the arithmetical sense is weakly developed in primitive communities, and the "seller" of goods would desire cattle because he received something tangible in exchange for his goods. Money is a growth, usually a slow growth, and a kind of collective confidence is needed for its development; a seller demands either tangible commodities or else some form of money which experience has shown that he can utilise without trouble or delay.

9. Thus a great difference between primitive and modern trade is that the savage can exchange goods only through

a material medium, while the civilised man exchanges goods on a basis of accounting; two men would experience little difficulty in exchanging a bicycle (say) for a piece of furniture; if exchange took place at all, they would agree on a money valuation of the bicycle and the furniture, and the excess would be paid in actual money. This process would be impossible among primitive people; the medium of exchange would have to pass from hand to hand during each separate transaction, except in those cases where two articles are directly bartered. In modern terms, *A* would have to give the bicycle to *B*, receiving money for it, and part or all of this would be returned to *A* in exchange for the furniture. This clumsy process is avoided by calculations of which the normal primitive mind seems to be incapable.

Gold is acceptable because it has alternative uses, but this fact is usually forgotten during a transaction; the normal trader accepts gold because it possesses powers of purchase. A great advance was made when men learned to transact business without the visible mediation of gold; gold may thus become a "money of account" in such a way that exchanges are made on a money basis without the actual use of gold. Thus if *A* and *B* agree that the money value of the bicycle is the same as that of the furniture, an exchange may be made without the actual use of money, though it has been adopted as the basis of calculation.

Gold is thus becoming more and more the basis of calculation rather than the material medium of exchange. One example is seen in the case of bank notes, which are in effect a receipt for gold. These are far more portable even than gold, and when issued by a trustworthy bank give the same feeling of security as does gold itself, for

they are usually exchangeable for gold. If a community has unshaken confidence in notes, their greater portability will lead to the displacement of gold in the pockets of men who habitually carry much money.

10. The last step in the evolution of a convenient money is the complete disuse of any material medium of exchange, though gold or other substance is still the money of account. **Clearing Houses.** The possibilities of such a money are foreshadowed in the clearing house system as applied to banks and railways, and also in the system of bills of exchange to be later described. A simple illustration will illustrate the clearing house system. The transaction between *A* and *B* mentioned above will show that money may often be dispensed with in simple, direct transactions. Now suppose that three men, *A*, *B*, and *C*, live in the same place; *A* owes *B* a large sum of money, *B* owes *C* the same sum, and *C* owes *A* the same. It is obvious that if these men agree to cancel the debts, matters will be settled satisfactorily without the use of money. If the debts are of different amounts, a simple arithmetical calculation will show that the debts may be settled by the payment of a small balance, and the amount of money which actually passes will be small compared with the total debts. In a railway clearing house, the credit and debit of each railway with respect to other railways is estimated; instead of each railway paying out large sums and receiving other large sums, it merely pays or receives a comparatively small balance. Transactions are carried out by a process of book-keeping; actual money is used only on relatively few occasions. In business as a whole, the bulk of the payments are made on this principle, and actual money is used as small change. Cheques in banks are largely used in place of metallic money; the cheque system, con-

sidered later, will be seen to effect a clearing of debts with the minimum amount of such money.

By these means the disadvantages of a gold money have been largely removed, but the main disadvantage still remains; as long as the book-keeping processes of debt clearing are based on gold as a money of account, the changes in the value of gold in relation to other commodities prevents gold from becoming a fixed standard. Gold is a more stable standard than most things; it is far less stable than it should be.

11. Many men believe that the changes in gold values, which are of course reflected in prices measured in gold, may exert a beneficial effect on industry; this will be discussed later, but here it is sufficient to say that a changing standard brings certain evils, whatever other results may accrue. History has shown a slow development of weight and measures independently in different localities, and also an equally slow tendency to the spreading of certain standards within the limits of a State, and often beyond it. The common sense of peoples holds that varying systems of measures should be brought into uniformity; the only obstacle to world uniformity of weights and measures is local conservatism, and this is continuously breaking down; a world uniformity is probable in the future. Variations which are so manifestly troublesome in respect to weights and measures will not be less so when money is in question. A varying money standard presents the same disadvantages as would the use of a standard of length which continuously varied, or of an hour or minute whose duration changed from day to day.

This is not always easy to understand, because men take their ideas of value from, say, a sovereign, just as they take their ideas of length from the yard. That is, they

**Evils of a
Changing
Standard.**

instinctively assume that the sovereign does not change. If the world is flooded with new gold, the effect will be the same as if huge stores of tin were discovered ; the tin would fall in price. Forgetting money for the moment, the effect would be that the exchange value of tin in relation to wheat would fall. Now gold has a cost of production just as tin has ; there are mines known to contain gold which are not profitable to work, *i e.* there are marginal mines just worth working. If the gold market is flooded with metal from easily worked mines, the marginal mines will cease work, the marginal cost will fall, and gold will be obtained with a less expenditure of labour or wheat or whatever is our standard for the moment. A given amount of wheat will exchange for more gold, or the exchange value of gold in terms of wheat will fall.

The average trader does not view the phenomenon in this light. He does not consider that if the cost of production of all other articles is for the moment constant, while that of gold falls, it is the gold which has changed. Under such conditions, every article would rise in value relatively to gold ; every article would exchange for more gold. The trader sees the change from the side of gold ; he does not say that an article buys more gold, but that more gold is required to pay for the article ; he says that prices have risen, and implies that changes have taken place on the side of commodities.

12. Prices may and do fall because of the changes in supply of a particular commodity ; if milk becomes more abundant, its price will fall, other things being equal. If, however, every article without exception changes in price, and the change is in the same direction in each case, and to the same proportionate amount, it may be assumed that the change is wholly due to a change in the gold standard itself ; in a

**Causes of
Price Changes.**

similar way we believe that the earth is rotating because all the stars appear to trace circular paths in the same direction.

In practice, the case is more complex, for the change in gold value is only one of a very large number of value changes, all occurring together. In normal times, some prices are rising and others falling, and it is then difficult to discover what proportion of price change is due to changes in the supply of money and what to changes with respect to commodities. Thus a development of gold production may increase the amount of money in use, but certain commodities may actually fall in price because they are increasing faster even than gold.

General prices may fall as well as rise; in a single country they may fall if there is a large demand for gold and silver from other countries. During long periods, India has absorbed an immense store of precious metals, and the gradual fall of prices which has been observed at certain times is partly explained by this "drain to the East." The same effect will occur if the sum of the wear and tear of precious metals, and of increased use of them in the arts is not compensated by the production of new gold and silver. Lastly, prices will normally fall if gold production does not keep pace with trade and with the production of goods in general; if all production except that of monetary metals were suddenly doubled in efficiency, prices would fall, though the amount of money in use were constant.

13. More and more the necessity of a true standard money of account is becoming obvious; the nature of such standard is not so inevitable. A rigid supply of money in a developing community means a continuous fall in prices; it is possible that a better standard would be one which

**Necessity of
invariable
standard.**

would continuously adapt itself to changes in general productivity, *i.e.* one which would be so arranged that general prices were constant. This might conceivably be done, very roughly, by deliberate control of the monetary system; it could probably be done more effectively by the overthrow of gold (or silver) as the standard of value, and the substitution of a standard which conformed more accurately to changes in supplies.

14. Suppose that the amount of metallic money (with its paper substitutes) were constant and that everything else increased in quantity, all things in the same ratio; assume also that marginal utilities then fall in the same ratio; suppose a new substance possesses all the qualities of a perfect money, its supply increasing as fast as that of other commodities. Then one unit of this substance would always buy the same amount of all other commodities (except metallic money), and thus prices measured in the new money would always be the same; only the price of precious metals, or rather that of metallic money, would alter. Measured (say) in gold, general prices would fall, and the price of metallic money would be constant; measured by a unit of the new substance, general prices would be steady, and the price of metallic money would rise.

There is no such substance, and exchange values do not retain their relative values. If, however, a group of substances can be found such that the changes in the relative value of a combination of definite quantities of members of the group follows exactly the changes in the relative value of commodities taken as a whole, then such a combination would meet our requirements. The supply of wheat may increase more slowly than the normal, and that of cast iron more quickly; there may be a combination,

say of a quarter of wheat plus a ton of iron, such that its marginal utility will fall in the same proportion as that of the average commodity.

This principle can be followed whether general gold prices are falling or rising; gold prices may be utilised to construct such a new standard, but gold would no longer be the standard of value. The ordinary standard is, in most countries, a certain weight of gold of a definite fineness; under the new system it would be a combination of definite quantities of certain representative articles. In each case, the unit is invariable, in the former case, however, the changes in marginal utility of the whole amount in use bear no relation to the changes in marginal utility of the average commodity.

15. The ideal standard would be a definite quantity of a normal commodity; as this is unobtainable, a substitute known as an Index Number is growing in favour. If a very large number of commodities were selected, and their prices compared from time to time, a general average could be obtained, and so a general rise or fall of prices be recognised. The price movements of a single commodity could give little indication as to changes in the value of the gold standard, but if a number of representative commodities all show (say) a rise in price, it will probably be true that gold has fallen in value. The more commodities are selected, the more likely it is that the abnormally high price of one commodity will be balanced by the low price of another; if of ten commodities chosen from different groups of products, one has fallen in price (measured in gold), one has remained stationary, and the others have risen, it is fairly safe to conclude that the value of gold has fallen in relation to that of commodities in general while that of one commodity has fallen even more than that of gold.

Index
Numbers.

A successful choice of the right representative commodities combined in the right way may lead to the construction of an index number of prices which shall follow very closely the changes in the price of the normal commodity measured in gold. A certain year is usually taken as a base line, the index number being fixed at 100. If representative prices rise 10 per cent in the next year, the new number will be 110, and so on. If the numbers are rising, general prices are rising, and the value of money is falling. If, however, the money standard is based on the index number in such a way that £100 in metallic money is held to be of the same value at any future period as the number of pounds represented by the index number, the price of the normal commodity in this new standard would remain constant. Ordinary prices would vary, for values continually fluctuate apart from the changes in the value of gold, but a man who in the first year earned £100 and in the second year £110 (in the above case), would find the purchasing power of his wage unaltered; some articles would rise more than 10 per cent., but this rise would be counterbalanced by other articles which had risen less. The application of this to exceptional conditions is obvious and important; in a period of rapidly rising prices, the labourer should be paid in accordance with such a scheme; if the exchange value of his labour is constant, he will be treated unfairly if his (gold) money wages are kept constant, but justly if his wages rise in exact proportion to a reliable index number.

16. The construction of an index number is a matter of some difficulty. The selection of commodities must be made with care; if the bulk of the articles considered belonged to one group, *e.g.* textiles, foodstuffs, or manufactured goods, it would probably happen that their prices would tend to

**Construction
of Index
Number.**

move in sympathy; thus for considerable periods, food-stuffs may gradually rise in price while manufactures fall. If the goods were not sufficiently variegated, the index number obtained might give a misleading impression of the course of general prices. Thus it is wise to make the goods considered as representative as possible; examples of each great class of commodities should be included.

There is, however, a practical objection to such a wide choice, *i.e.* that certain classes of goods are so variable in price that it is difficult to record price changes. Thus wholesale prices are usually more easily obtained than retail; they are the result of keen competition, and tend to an equality from place to place; retail prices are notoriously inconstant, even in a single street. Thus wholesale prices are on the whole more useful for the construction of index numbers. The broad conclusions will doubtless be the same as if more commodities were included, but the actual numbers cannot pretend to perfect accuracy when the choice of selected commodities is limited.

Even when the serious difficulties of price determination are overcome, the method of construction of the index number needs serious consideration. If all commodities were measured in the same units, and their prices did not differ enormously, a change in the simple average of prices would not differ greatly from the normal price change which is sought. As it is, units differ, ranging from the ton to the grain, and values differ yet more markedly. Thus, if a simple average were taken, great changes in a number of quite unimportant though very highly priced articles might exert an unjustifiable influence on the index number; if diamonds were one of a dozen articles in a combination, and if artificial production brought down their value to a nominal amount, the index number would show a sharp fall in general prices which would have no

basis in fact. This difficulty may be partly overcome by taking as the unit one sovereign's worth of each commodity in the standard year, and recording the changes in the price of this amount

17. In any case, the device of weighting is very useful when accuracy is desired; even when commodities are measured in the same units and their prices are comparable, an index number based on a simple average may be misleading. Thus pomegranates might be taken as a representative commodity; the choice would be a bad one, but this fact will make the illustration clearer; if the price of pomegranates suddenly and markedly rose, the index number would show a rise, unless the number of commodities selected was very large; in actual fact, the real change in general prices owing to this cause would be infinitesimal. This difficulty is avoided by obtaining a weighted average; each price is multiplied by a number representing the relative importance of the commodity in question. Suppose that a sovereign's worth of cotton and also of wool are taken as the base line of a rough index number in a particular year, the relative importance of wool being represented by 2 and cotton by 5. If in a succeeding year that quantity of wool is worth 23s. and the cotton 16s., the simple average is 19s. 6d.; the weighted average is found by adding five times 16s. to twice 23s., and dividing the sum by 7, obtained by adding 5 and 2; the weighted average is thus 18s. As cotton is more extensively used than wool, a fall in the price of cotton is more important than an equal rise in the price of wool.

If proper care is taken in the choice of commodities, weighting is not essential for most of the purposes for which an index number is used. Different index numbers, *e.g.* the Sauerbeck system, those of the Economist, the

Statist, and of Government departments, show a general similarity in their courses, though they are constructed on different principles. A perfectly exact system is needless when the estimation of prices cannot be made precisely. The further suggestion that the index should be the geometric mean and not the arithmetic mean may be met by the same argument. It may be that index numbers will play a most important part of the economic life of the future, but for present purposes, perfect accuracy is neither necessary nor obtainable.

18. So far, it has been tacitly assumed that gold is the main medium of exchange, as well as the standard of value, so as not to introduce needless complications. The nature of the present media of exchange must now be considered. In England, the standard is gold, partly replaced by Bank of England notes; to-day, the gold has been displaced by Government notes. There is a subsidiary silver and copper currency (currency is the name given to the legal monetary system of a country). In addition, cheques to a large extent perform the function of money.

If the currency were gold, and no other money existed, and if the amount of gold used as money were doubled, prices would also be doubled, provided that gold was not held up by hoarding or in any other way, and that the number of goods exchanged remained constant. If every one had twice his former stock of gold, its total utility to him would be the same as before (in practice, however gold would flow into the arts); this assumes that a man's habits are not altered by an apparent increase of wealth. In other words, the elasticity of the demand for the gold money would be unity.

19. In its crude form, the Quantity Theory of money states that general prices are directly proportional to the

amount of money in circulation, and it receives support from the fact that rising prices normally follow the influx into a country of precious metals. As, however, no exact correspondence can be traced between the amount of precious metals in a country and the general prices prevailing, the theory has been often criticised. In its crude form, it is not numerically true.

A bank note may represent money which is lying idle in the coffers of a bank; more often it increases the "money" currency already in circulation. An uncovered banknote has the same effect on prices as has gold coin, if the note is equally acceptable; the same remark applies to the present Treasury notes. Subsidiary coinage, *e.g.* shillings and pennies, have the same effect on prices as long as they circulate at face value.

20. The hoarding of coin or notes has the opposite effect to that of the development of subsidiary money; it is only the money in actual circulation which affects prices. Every man hoards to a small extent, for he usually keeps a little money in his pocket; so far as this is not being used for purchases, it tends to lessen the amount of money in circulation, and so to lower prices. This is usually expressed by saying that prices depend not only on the amount of money but also on its rapidity or velocity of circulation. If a man is invariably short of money, whatever is his income, rapidity of circulation for him is large; it will be large for a man who makes frequent payments, especially if they are at regular intervals, so that he needs no cash for emergencies. Circulation will be more rapid where population is dense, and where transport of person and of money is easy.

Rapidity is enormously increased by the use of money

substitutes. If a man uses cheques for large payments, he will have less need to keep a large store of money; rapidity of circulation will thus be increased, but the effect on prices cannot be exactly estimated, for the amount of money in circulation may also be affected. It is best to treat cheques as a form of money when considering their effect on prices.

The rapidity of circulation with respect to an individual is taken as his total money payments, say for a year, divided by the amount of money he carries on the average; thus the average store of money he retains, multiplied by its rapidity, gives the amount of his payments per year; it is the latter quantity, and not the amount of money held which affects prices. If the sum of these products for the whole population is added together, the total amount of money which changes hands is obtained; this amount is also the total sum of money in the country multiplied by a number which will be the rapidity with respect to the money of the normal man. This rapidity is a fairly constant quantity, perhaps more constant than the amount of money in circulation: it depends on the habits of individuals.

21. Bank deposits will be explained later, but their existence as a form of money substitute, based on credit, may be assumed; they raise prices in the same way as an increase in true money. To the total amount of money changing hands must be added the total amount of fictitious deposits circulating by means of cheques; this is obtained by multiplying the amount of deposits by their rapidity, as in the case of money. The normal rapidity of cheques is also fairly constant from year to year, for cheque users keep about the same proportion between their cheque and money payments, and roughly the same proportion between re-

serves of money and deposits in banks. Thus the amount of true money in circulation is a valuable index to the whole amount of money and money substitute which passes from hand to hand in a given time; there is so far some justification of the crude form of the quantity theory.

22. The other side of the problem deals with the commodities which are exchanged for all the money (in the widest sense) which changes hands during the year. Total commodity and total money must be equal in value. If the product of the amount of money and normal rapidity of circulation is added to the amount of credit deposits multiplied by their normal rapidity, one side of the Equation of Exchange is obtained; the other side is obtained by multiplying each commodity exchanged by its price, and this will be the same as the total amount of commodities multiplied by their normal price; this normal price is the ideal index number which would be obtained by including every commodity and weighting each one appropriately. If three terms of the equation of exchange are known, the fourth, which represents the general level of prices is also known. Thus general prices depend, not merely on the quantity of money in circulation, but also on its rapidity of circulation and on the volume of trade. The equation is simplified if the existence of a normal rapidity of circulation of all kinds of money, including credit substitutes, is supposed.

It is probable that the three determinants of general prices are to a large extent independent. Thus an increase of money will doubtless cause temporary variations in the amount of money carried by the normal person, but in the long run the average man will tend to carry the same proportion of his total means as he did before. Thus, broadly speaking, it may be said that an increase of money or credit will raise prices, that increased rapidity of circu-

lation will have the same effect, but that an increase in the volume of trade will lower prices, and *vice versa*. Thus the truer form of the quantity theory is that general prices are proportional to the whole amounts of exchange media which change hands in a given time, when the volume of trade is constant; prices are inversely proportional to the volume of trade, when the money side is unchanged; *i.e.* when the amount of commodities which change hands in a year is doubled, prices are halved, if other things remain equal. It is true that an expansion of trade is often accompanied by rising prices, but these are caused by the increased credit facilities available at such times.

23. It follows that money prices, as distinguished from exchange values, may to some extent be influenced by deliberate action of governments or other authorities which manufacture money; where a precious metal is the sole standard, and where the value of a coin does not greatly differ from that of the metal of which it is made, the effect on prices will be limited by the possibility of melting coins for use in the arts. Governments at various times have tried to suppress such practices, often with small success. In England the manufacture of currency has passed almost completely into the hands of the State. The English currency is controlled by the State so far as it is not actually owned by it. Before the war, the work was so well done that great changes in general prices were the result of changes in world production of gold or in the volume of trade rather than of fluctuations of the Government's monetary policy.

24. English currency is an example of Monometallism, or the single standard. This standard is gold; before the war, gold was also an important medium of exchange, but to-day it has practically

**Control of
Currency.**

Mintage.

disappeared from circulation, and the gold sovereign is a theoretical standard only. When in circulation, its value was always very nearly equal to its gold contents, for coinage was free and gratuitous. Coinage is said to be "free" when any man can bring bullion to the mint and have it coined; it is also "gratuitous" when the process is carried out free of cost. The manufacture of sovereigns (as of all metallic money) was and remains a State monopoly in this country; if State coinage had been limited in amount and not monopolised, the scarcity of government money might have raised its value above the metallic content until brought down again by private coining. As it was, any temporary excess value of sovereigns over value of gold content was quickly rectified by the fact that men would bring bullion to the mint to be coined, thus obtaining a higher value for it; in practice, the mere knowledge that this could be done prevented an undue rise of the value of a sovereign (measured in terms of gold), *i.e.* prevented a fall in the price of gold bullion.

This would not apply to mints where coinage was free but not gratuitous; in such cases, the value of a coin might rise above the value of metallic content by the amount of the Seignorage, which is the charge for coinage, when such is made; where this amount is limited to the actual cost of coinage, it is termed "mintage." Where mintage is charged, the value of the coin tends to oscillate between the value of the metallic content and the increased value due to addition of mintage. If demand for money increased, its value would increase as in the case of an ordinary commodity, but it could not permanently rise above the higher limit as long as coinage was free; it could not sink below the lower limit (in the absence of restrictive regulations), for then it would be profitable to melt down the coins, bullion being more valuable than

coin; this process would raise the marginal utility of coins and lower that of bullion. Under such a form of coinage, the exact value of the coin would depend on demand for coins in relation to supply; a country becoming progressively richer would probably find that its coins were worth their bullion contents together with almost the full amount of mintage.

When the seignorage is very high, the coinage (or note issue) is said to be "fiduciary" (the term "seignorage" is in fact not usually applied to these cases). Thus a government note circulates at a value far above its cost, while before the War the sovereign circulated at almost its exact cost. Again, there was a large profit on the coinage of bronze and silver; there was no such profit on gold; a man who brought bullion to the mint in sufficient quantity could have it coined at the rate of £3 17s. 10½d. per ounce of gold of standard fineness, or could at once obtain payment from the Bank of England at £3 17s. 9d. per ounce; in the former case he received, in due time, the exact equivalent of his bullion in a coined form; the State actually lost money on gold coinage, for it paid the cost of minting.

25. A fiduciary coinage, one which is intended to circulate at a higher value than its bullion content, is sometimes said to be depreciated, though the term "depreciation" usually refers to an issue of "inconvertible" notes which are so abundant that their actual value is below their face value; these will be considered later. Where such true depreciation occurs, the inferior coins or notes tend to drive the superior money out of circulation; Gresham's Law obtained its name from the Elizabethan statesman, though he was not the first to note its application. It is to the effect that "bad money drives out good"; the "bad" money may have been worn

and clipped coins, or new coins which contained a less value of bullion than the old. Again, if gold and silver are each legal tender to any amount, *i.e.* may be used in payment for any debt, the relatively cheaper metal will drive out the dearer; if the supply of gold increases, gold bullion will be less valuable, and gold coins will replace silver, for they will be overvalued.

The explanation of this is found in the fact that when a man has the choice of two metals in which to make a payment, he will pay in the less valuable medium; the better coins will be hoarded, melted (in spite of restrictive laws), or used for payment of foreign debts.

Token Money. 26. Our fiduciary issue of silver and bronze coins is not depreciated in this sense, nor was it when the sovereign was in circulation. This cannot be wholly due to limitations of legal tender, *i.e.* that a creditor need not accept more than forty shillings in silver or a shilling in copper, for it is plain that Gresham's Law will be effective whatever may be the law of legal tender. Our "token" coinage has been saved from depreciation by the limitation of its amount. There is a real and large demand for such an auxiliary coinage; silver and copper coins are acceptable throughout the country, though not outside it; hence it follows that the limited supply of shillings keeps up the marginal utility of a certain shape and size of stamped silver above its bullion value. Economic history however is full of examples of the depreciation of a token coinage through over-issue.

Bimetallism. 27. Many states have tried to use gold and silver, not only as media of exchange, but also as standards of value; in England, silver is in no sense a standard of value. A system in which two metals are each legal tender to any amount, and in which the two metals are freely coined on the basis of a given

ratio between their bullion values is called Bimetallism; if there were more than two, the system would be called Symmetallism. Bimetallism has been widely advocated as a means of steadying general prices; if prices depend on the variations of two metals instead of one, it may be that the effect of an increase of supply of one metal is limited by the more normal supply of the other; prices alter through changes in the whole supply of money, and it will not always be the case that changes in the supply, say, of gold will coincide with changes in the supply of silver.

Bimetallism is not normally possible in a single country. Suppose that gold and silver are both freely coined and that the ratio between the values of the metals is legally fixed at 16 to 1. Now suppose large new discoveries of gold; gold coins may become overvalued, *i.e.* their value, measured in silver may be greater than that of gold bullion. If the bullion market ratio falls to 15 to 1, it will pay to buy gold bullion and have it coined; thus 15 silver dollars (say) can be exchanged for a quantity of gold sufficient to make 16 gold dollars. When this is recognised, men will pay their debts in gold coin, which is overvalued; silver coins will be held back, and melted or exported. If the new gold supply is very large, silver may be completely displaced from circulation. Similarly gold may be driven out if silver coin is overvalued.

If the whole world adopted bimetallism, the relatively more valuable metal could not be thus exported; it would be melted and used in the arts until its marginal utility there was equal to the marginal utility of the corresponding coin, more valuable through its greater scarcity. Thus there would be changes in the relative numbers of gold and silver coins, but the legal ratio would be maintained; the same result might happen in a large group of countries.

Thus France, Belgium, Italy and Switzerland formed the Latin Union, but the free coinage of silver had finally to be suspended, and silver coins became a token currency, though they were not recalled; thus bimetallism degenerated into the Limping Standard.

The closing of the Indian mint to silver in 1893 brought in the Gold Exchange Standard in that country, *i.e.* gold became the theoretical standard, though existing rupees formed the medium of exchange. India had formerly absorbed much superfluous silver from western countries; it had a single silver standard, and rupees were falling in price compared with gold, for the price of silver compared with gold was falling throughout the world. This fall was checked by closing the mint to silver; after a time, the artificial limitation of the supply of silver coins increased their value. It was decided that in the event of a rise of value of the rupee, this coin should be exchangeable for gold at a fixed rate, and that the government was empowered to coin rupees. The fall in the value of the rupee was successfully checked, but a silver market was lost to the world.

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CHAPTER XVII.

THE MONEY MARKET.—THE ENGLISH BANKING SYSTEM.

1. The monetary system of a country varies with the changes in its economic life ; the use of a gold standard is impracticable in most primitive countries, while the use of copper as a medium of exchange in large transactions would be almost impossible to-day ; the number of individual transactions is so huge that even gold is far too bulky for many monetary payments ; it is not too much to say that modern economic development would have been impossible had not gold been largely displaced as a material medium of exchange.

The various substitutes for standard money have been already considered ; it is now necessary to show in what way they are circulated. The use of substitutes has been made possible by the development of banking in all its forms. In mediæval times, a rich man would welcome the opportunity of placing his valuables in safe keeping, and might be willing to pay highly for the service ; this would apply even if the valuables consisted of a hoard of metallic money. In those times, there were many men eager to borrow money for various purposes, and were willing to pay for the loan of it ; as industry developed, more would-be debtors appeared. Two classes of persons

were able to lend money, those who owned money, and those who controlled it. Thus banks appeared; so much money was deposited with them that they controlled large sums.

2. Experience showed that the amount of money withdrawn from deposit in a given time bore only a small ratio to the whole deposits; thus it was normally quite safe to lend out a large proportion of these deposits, keeping back that amount which was sufficient to meet the demands for return of money lent. This became so profitable a proceeding that banks could afford to tempt depositors by offering interest on money lent, for they could recoup themselves by the higher interest they could demand from borrowers. Thus, banks transferred the use of money from the possessing and saving classes to those who for any reason wished to consume wealth at once. To-day, the most important class of borrowers is that of entrepreneurs, who need the temporary use of money for productive purposes.

Such banks made money because they were trusted by their customers; if all the customers demanded repayment at one time, as occasionally happened, a bank failure resulted; banks were successful if confidence in them was so great that such a "run" never took place. Men might demand repayment for various reasons, but they would not all require it together, if the credit of the bank was sound. Even in England to-day, a run on a bank is not impossible; it may be that a bank is perfectly solvent, in the sense that for all the sums of money lent out there are corresponding securities of at least equal value, but if public confidence is shaken, men will clamour for immediate repayment; depositors then require metallic money, or acceptable notes, and if the stock of such currency is

Rise of
Deposit
Banking.

insufficient to meet the demand, the bank must close its doors. When the credit of a bank is thus lost, its opportunities of "coining its credit" have gone, and it must give place to other banks. Here, as everywhere throughout modern economic life, it is seen that mutual confidence is a necessity of the smooth working of the economic structure.

3. Banks came to realise very early that there were opportunities of further gain, with correspondingly greater dangers of failure. There have long been banks of issue and banks of deposit; it is possible that note issue was at first an almost accidental outgrowth out of deposit banking. Men received receipts for gold deposited, and the possession of such receipts came to be as desirable as that of actual money, for they could be exchanged for money at will. After a time banks came to issue these receipts deliberately, as bank notes, or perhaps the notes would lose the form of receipts though still be convertible at will into metallic money. If, then, there was perfect trust in a bank, its convertible notes would be as valuable as money; the bank was eager to issue them, for they practically represented a manufacture of money. Again, the bank could, as a rule, safely issue these notes to an extent far beyond the amount of metallic money possessed; if all the issued notes had been brought back for repayment at one time, the bank would be ruined; in practice, however, this did not occur when a bank possessed public confidence. Bank notes are so convenient that they are preferable to gold when large sums are concerned; a depositor or borrower would be glad to receive such notes instead of money. Thus note issue became so profitable that banks grew up whose main source of income was found in the circulation of notes.

Naturally, failures have been frequent; as the prospect

of gain is greater, so also is the risk of loss; if all notes issued by a bank had been returned for payment together, probably no bank could have stood the strain; the successful banks were those whose credit was so good that bank notes were as good as money; if men believed that a certain note issue was sound they would not trouble to present notes for repayment, and so notes could be safely issued in large amounts.

4. The manufacture of bank notes plays only a small part in modern English banking, except in **Book Credits.** the case of the Bank of England. They have been displaced by book credits. When a business man is in want of capital, he can borrow it at a bank if he is trusted by a local manager. He requires the use of money, but is perfectly ready to accept a money substitute which is equally effective; he would prefer bank notes to specie; he prefers the use of a cheque book to either. A cheque is quickly written out and can be made for any amount, while it constitutes an automatic receipt of payment; when a cheque is charged to a man's account, he knows it has been placed to the account of the holder. Thus, when a man borrows money, he may be merely given a cheque book, which he can use up to a given amount, paying interest for the privilege. The bank sells its credit merely, for it parts with neither specie nor notes; it manufactures money just as truly as it does when it prints notes; it takes further risks, for its liability to a dangerous "run" is increased, while its reserve of metal has not correspondingly increased. The prosperity of a bank thus becomes bound up with the solvency of the entrepreneurs who are its most important customers.

When a man borrows money from a bank, his loan is called a "deposit," and is treated in the same way as is

the deposit of actual gold or silver brought by an investor. If a bank lends £10,000 to a manufacturer, the loan appears on both sides of the balance-sheet; it is an asset, because it is owed to the bank; that part which remains in the bank is treated as a deposit. Thus, if £3,000 is drawn out by cheque, the £10,000 (and interest) remains as an asset, for the whole sum is still owed, but £7,000 remains as a deposit. When men point to enormous bank deposits as a sign of national wealth, as at present, it must be noted that such deposits are mainly fictitious, being book credits. By this means, an enormous structure of credit is built on a relatively slight foundation of metallic money.

5. Banks are not, however, a parasitic growth on industry. In earning large profits, bankers are rewarded for their social utility. Gold is not only more cumbersome than paper, but much more expensive; if gold were as convenient as paper, it would yet be unwise to coin the immense amount of bullion required by modern trade conditions; a metallic medium of exchange would mean the transference of wealth from productive purposes to a use which could equally well be given by a cheaper material. Thus wealth that otherwise would be put to a wasteful use is set free for industry; further, the very serious wear and tear of the precious metals is lessened by the use of substitutes. Notes and book credits allow the money medium to expand in amount at a low cost.

A banking system also makes money more mobile; in a pure metal economy, it might happen that some men hoarded gold for which they had no immediate need, while traders in another place found their productive energies crippled by lack of such money. Banks could do something to bring together the lender who will accept a small

interest if his hoard is safely stored away and the borrower who will pay a high interest for the use of money which will bring large profits; their usefulness would be limited by the trouble and expense of transporting precious metals. The modern system of cheques, however, has made the problem of money transference one of little difficulty. English banks have been so far perfected that the small savings of men with neither knowledge of business nor interest in it are directed by banking authorities into the most productive channels. Banks cannot afford to make serious mistakes in judgment; if they lend often to the wrong entrepreneurs, they will find themselves in difficulties. Those banks become most prosperous which most successfully guide capital to the most efficient employers.

Banks also perform a useful function in that they stimulate saving; interest is not the only incentive to accumulation of capital, but much less capital would be available for industry in the absence of organised institutions providing facilities for thrift. The increased production which follows the extended use of capital means more saving, and so on. The existence of banks is thus a main factor in the great increase of wealth of our time. The convenience of banks is a further advantage, apart from questions of economy. The substitution of the note for the coin and the cheque for the note has done away with the old cumbersome methods of settling large accounts.

6. The cheque system owes its efficacy to the existence of clearing banks; without them, a cheque would merely be a more convenient bank note. A man may receive a cheque drawn on any bank; he takes it to his own bank, and it is placed to his credit; though banks are independently managed, such transactions are carried on as if they were under one

**The Cheque
System.**

control. It follows that huge sums of money may be transferred without the actual passage of any money at all. Consider a particular provincial bank; cheques are brought to it drawn, perhaps, on every bank in England, and cheques have been drawn on it by its customers, and probably lodged with other banks. If banks were not in connection, a man might be able to get a cheque cashed at once, but then his bank would have to obtain the money from the bank on which the cheque was drawn, and this latter bank would obtain it from the man who drew the cheque. This cumbrous procedure would be intolerable as a means of settling the great number of present day transactions.

At certain times, all the banks connected with a given clearing house send up the cheques they have received. Each bank will demand payment for the cheques on other banks which it has received, but will be liable for those cheques drawn on it and received by other banks. The clearing banks calculate the net credit or liability of each bank, and does the whole of the colossal amount of work represented by the cheques. Each bank will simply pay the clearing bank its net liability or receive its net credit. Thus, payments which represent millions of pounds are settled by bookkeeping methods, without the intervention of actual money. If a particular bank has received £10,000 worth of cheques on other banks, while £9,990 in cheques has been drawn on it and is held by other banks, it will be owed £10 by the clearing bank.

**Dependence
of Business
on Credit.** 7. Modern business so far depends on credit that if credit facilities were suddenly withdrawn, it is doubtful how far manufacture could be carried on at all; the importance of keeping credit stable has been so far recognised that some sort of continuity was retained even during and after

the war, but careless or inexpert management of national credit would have had disastrous consequences. Every advantage of credit facilities has its corresponding danger; the elasticity of the deposit and cheque system is good in so far as it allows of the adjustment of the amount of money medium to the needs of business, but the dangers attaching to a loss of confidence in credit are such as to call for continual vigilance. In particular, bank depositors are nervous, and are apt to demand a return of their money if they scent danger; if a bank has specie enough to meet demands on it, nervousness is allayed and the danger is over. Men demand a material basis for the media of payment and usually do not suspect how small a proportion of debts are paid in coin or even in notes. A bank knows that its reserve will be low at certain times, *e.g.* before holidays, or at harvest time, but it must carefully guard against a depletion of its stock of money at times when it is not well prepared to meet a sudden and unexpected call on it. An unexpected demand for money is far more dangerous than one which is foreseen.

8. The last form of exchange medium to be considered is the Bill of Exchange. Legally, a cheque is a bill which is drawn on a banker, but commercial bills show special features which call for separate consideration. Commercial bills are most prominent in connection with foreign trade, but are not confined to this category; a foreign example will show the principle involved, which is similar to that involved in a clearing bank. An Oldham spinner buys cotton from Egypt; it would be possible to send gold in payment, but the cost of transport and insurance would be heavy. It may be that a Cairo merchant has bought cotton goods from Manchester, and is also loth to send specie in payment. If the two amounts are the same, the debts may

**Bills of
Exchange.**

be settled if the Oldham man pays his Manchester neighbour, and if the Cairo merchant pays the same sum to the Egyptian planter; no specie need leave either country.

This is a much simplified account of the work of commercial bills. A bill is an order to pay, drawn by the creditor; the debtor "accepts" the bill by signing it, and it becomes the property of the drawer, it may then pass from owner to owner as money. Its peculiarity is that its value when drawn is less than its face value, and its market price increases till it falls due. Payment is rarely demanded at once in commercial transactions; thus a bill is made payable, say, in three months. The drawer may require his money at once, while the acceptor is not willing to pay it; in this case the drawer will seek a man who will wait for the bill to mature, and advance the money at once. No one will give the face value in such case; first, the buyer will demand the interest he would obtain from his money had he not bought the bill; second, the buyer will require a rebate as insurance, as there is a possibility that the bill will not be met at maturity. The market price will depend, first, on the length of time the bill has yet to run before maturity, second, the rate of interest, and last, on the degree of security that the bill offers. Thus the bill of exchange is a form of money whose value is rapidly altering. So far as bills relieve the strain on cheques and notes, and hence on money, it follows that bills raise prices in the same way as other forms of money; there is a difference in degree, for the transaction takes three months (say) to complete; so far as there is any doubt of ultimate payment, a discounting bank must hold some specie to guard against emergencies; thus bills do not always raise prices to the same degree as metallic money.

9. The discounting of bills requires a specialised knowledge of trade and traders; discounting has fallen largely into the hands of men who have made this branch of banking their peculiar business. **Discounting.** Interest and date of maturity present no difficulty; a clerk can estimate the discount on the face value when payment at maturity is certain; the discount on a bill of £1,000 due in three months will be taken as £10 when interest is 4 per cent. (the true discount would be £9 18s.). Discount houses must be able to estimate with some accuracy the real value of each bill, *i.e.* they must know what is the reasonable charge to be made for uncertainty; to that part of the discount which is the compensation for waiting till maturity is added a variable amount depending on individual cases. The discounting of any single bill is a speculation, for payment is never quite certain, but when a bank makes a speciality of discounting, it makes an assured profit, on the whole, in normal times.

10. Accepting houses are another class of banks with special functions. **Accepting.** A manufacturer may be quite solvent, and yet not able to convince a discount house as to the worth of his bills; in this case he may pay an accepting house to put its name to his bill; this done, it will probably be immediately discounted by a discount house; the latter is doubly safeguarded, for it has confidence in the credit of an accepting bank, and in addition the original acceptor of the bill is responsible for payment. If the Manchester cotton merchant receives a bill from a foreign customer, he will pay what is in effect an insurance to the accepting house, and obtain his money, less discount, from the discount house. This system gives a definite price to each bill, and thus bills may be used for payment of debts in the same way as notes or cheques.

If the Cairo merchant wishes to send money to England, he will try to buy a bill, *i e.* he will go to a bill broker to buy a promise of payment made by an Englishman, probably to an Egyptian cotton planter; the creditor of the merchant can then obtain payment from the acceptor of the bill when it falls due; thus two transactions are settled without the passage of specie from one country to another.

11. The English banking system centres round the Bank of England. This is in reality a State bank, for it is closely controlled by the Government and it deals with the State finances, but it is managed by private individuals who, strange to say, must not be professional bankers, though they may be members of accepting houses and other mercantile institutions. Though privately owned, the Bank has shown great public spirit, and it is largely due to its wisdom and fine judgment that financial difficulties have not been more frequent and more serious in the history of the last century. The new directors of the Bank are chosen as young men, and, though they retire for a period, they are re-elected; a proportion of directors retire every year, but the older men remain. The new directors are chosen with great care, and good men are available, for the post is one of honour, but the important decisions are vested in the older directors, who are likely to follow a cautious policy of continuity.

The supreme importance of the Bank lies in the fact that in it reposes a large reserve of bullion, which is in effect the basis on which a tremendous structure of credit is built. English banking is based on the single reserve; each bank does not keep its own reserve, for it is more convenient to lend it to the Bank; in times of financial stringency, when banks are in want of specie, they draw

out their reserve from the Bank; if a financial panic occurred so that these withdrawals seriously depleted the Bank reserve, a dangerous situation would arise. Present conditions are probably transient, and though the State Treasury note is the effective medium of exchange at present, a healthy condition of industry cannot be expected until real convertibility into gold is again the rule. Normal conditions are and will be assumed in this description of the Bank.

Before the war, the Bank felt the full force of any financial crisis; its importance was so fully recognised that it realised its obligation to save its keenest rivals, the bill brokers, from ruin; in a time of crisis, the ruin of these men might have destroyed the whole credit structure. Though it was a private bank in name, the State realised an obligation to help it when the task of upholding the credit of the country proved too heavy. The achievement of the Bank is the more notable in that the policy of keeping a very large reserve meant the locking up of much banking capital, and thus a serious diminution of profits.

12. To the ordinary man, the Bank is known as a bank of issue; the notes are legal tender to any amount, and their reputation is such that even in times of crisis they have been not less acceptable than gold. The Bank, however, seeks also to make a profit on money deposited with it; like other banks, it borrows money, and uses it to discount bills of exchange or in other forms of loans. The rate of discount which the Bank demands when it lends money on bills of excellent security is called the Bank Rate. Thus, if the rate is 5 per cent., the Bank will deduct from the face value of the discounted bill an amount of £5 per £100, multiplied by the fraction of a year that the bill has still to run.

**The Bank
Rate.**

The Bank Rate is very important for two reasons ; first, it determines the market price for money. If the Bank Rate rises, the discount charged by other banks and by bill brokers follows suit ; the rate of interest offered to investors is also influenced by this rate ; before the war, most banks offered a rate of interest to small investors which was a fixed amount below Bank Rate. Again, before the war, this rate was the means of controlling the amount of bullion and specie in the Bank reserve. As will be seen, a rise in the rate tended to draw gold into the country when the reserve was becoming too low, while a lowering of the rate allowed of the profitable employment of that part of the reserve no longer thought to be necessary for safety.

The Bank had no absolute control of the money market, for it could not set aside the working of economic laws. The Bank Rate was rather the interpreter of financial conditions. When money was "tight" or "dear," the Bank had in self-defence to put up the rate, else the multitude of men requiring the temporary use of money would swamp it and deplete the reserve. If money was "cheap," *i.e.* if many men were willing to lend money temporarily, while the demand for short time loans was small, then the Bank lowered its rate, to prevent the competition of brokers for bills taking away its profits. As the Bank Rate is a minimum percentage, based on "gilt-edged" or safe securities, brokers are tempted to undercut the Bank Rate, and the Bank may lose far more through loss of custom than it gains by the higher rate ; the Bank, however, now discounts the bills of regular customers at the market rate.

13. The Bank Rate is thus at the same time an index of the state of the money market and also a means of control of this market, within limits. The Bank cannot

decide the market rate for the loan of money ; it can influence it slightly under certain conditions ; yet the total effect produced by even a small change in the rate may be so great as to make all the difference between financial safety and danger. In normal times, the Bank could not raise the market rate appreciably by putting the Rate up to 10 per cent. (an abnormally high figure before the war) ; competition between brokers would keep down the rate. If, however, money was dear, *i.e.* if men were eager to obtain the use of it for a short period, the Bank might safely advance its rate a little ; borrowers would be willing to pay the advanced price, and the Bank's control of money was so effective that the needs of everyone could not be satisfied by the amount of money controlled by the brokers and by other banks. Borrowers would be obliged to come to the Bank for a portion of the money required, and so the outside money market could afford to raise the market rate without losing custom. In easier times, a fall in the Bank Rate would mean that the Bank would take some of the business of the brokers, and these would lower their rates to compete for custom. Thus, when the Bank acted as an effective financial index, a small change in the Rate was followed by a corresponding change in the market rate.

The Bank may choose its time for altering the Rate, but it cannot alter the market rate unless its action is justified by the state of the money market ; so far as it is effective, its efficacy is due, not to the fact that it is practically a State Bank, but to its control of the market obtained through its hold on a large proportion of the loanable capital of the country. On certain occasions, it has been necessary to fix a very high Bank Rate, not for the sake of profit, but to attract specie into the country ; on these

occasions, the market rate may be far below the Bank Rate, and the interest offered to depositors in banks may be influenced even less. At such times, the Bank is a profit-earning institution only secondarily, and thus its connection with the outside market must give way to its care of the Reserve.

14. The peculiarities of the structure of the Bank can be understood only when its history is known. It originated in the support of William III. by the Whig moneyed classes; since then the connection between the State and the Bank has been unbroken; it is understood that the Government will support the Bank in time of crisis. Thus the French war led to the suspension of specie payments, which lasted from 1797 to 1821; the Bank notes became inconvertible, *i.e.* there was no necessity to give gold in exchange for them at the Bank; the Government controlled the issue, and the result was an excessive creation of notes. The Bullion Committee, which sat in 1810, reported that the prevailing high prices were due to over-issue of notes.

Even when convertibility was restored, the Bank was repeatedly in difficulties through the depletion of its bullion and specie reserve. At this time, private banks were allowed to issue their own notes, as were joint stock banks after 1826, if not situated within 65 miles of London. Thus the dangers of over-issue could not be avoided by the action of the Bank alone. There were two schools of thought; the upholders of the Currency Principle held that an increase in note issue, even under convertibility, would lead to an export of gold, according to Gresham's Law, while the defenders of the Banking Principle believed that no danger existed as long as the notes were convertible. It was left for Bagehot at a later

date to show that the prime necessity was a reserve large enough to inspire confidence, whatever might be the actual amount of the note issue. One school believed in a rigid system of issue, and the other in a system adapted to industrial needs; the first was too rigid, at times when money was "tight," while the latter overlooked the importance of a sufficient reserve.

15. The Bank Charter Act of 1844 put into practice the principles of the Currency School; it made note issue much more rigid. New banks of issue were forbidden, and an existing bank which amalgamated lost its rights; existing banks of issue were allowed their normal circulation of notes, but could give up their rights for a consideration; when such banks lost their rights, the Bank of England was allowed to increase its issue against securities by two-thirds of the lapsed amounts. The number of such banks of issue fell from nearly three hundred in 1844 to nine (three joint-stock and six private) in 1920, and the last were absorbed by amalgamations in 1921.

The Bank itself was subjected to stringent control; the Issue Department was separated from the Banking Department; the latter section was left uncontrolled, but had no direct influence on the note issue; when it required notes it had normally to give gold in exchange for them as had any other company or individual. The Issue Department could circulate notes against securities to an extent of about 14 millions, 11 millions representing the permanent Government debt; this amount has since been increased by about $5\frac{3}{4}$ millions, this representing the amount taken over from banks whose issues had lapsed. All notes issued in excess of this amount had to be covered by an exact equivalent of precious metal; the Issue Department could keep one-fifth of the necessary

metal in silver, but no silver is now kept in this Department. Hence the fiduciary issue is to-day limited to 19½ millions; all remaining notes are covered by gold; the fiduciary issue is covered by securities only. The danger of over-issue of notes was thus reduced to a minimum, and the reserve in the Issue Department made amply sufficient.

16. It was believed by the opponents of the Act that the policy would cripple trade, as there would be insufficient currency in times of prosperity; this has not occurred, for a great development of the cheque system followed the passing of the Act. The unexpected result followed, that notes were largely displaced by cheques and bills, at least in respect to commercial transactions. This would probably have happened in any case, but the Act supplied a stimulus to the development of cheques which materially hastened the process of change. The rigid system of note issue necessitated a new means of adapting media of exchange to trade conditions, and the elasticity of the bank deposit system, taken in conjunction with the increased use of cheques, allowed of the expansion of credit in a form independent of the notes circulated or the bullion held by the Issue Department of the Bank.

Thus the Act guarded against one serious danger, but left another source of trouble untouched; the Issue Department had no control whatever over the activities of banks, and the excessive use of cheques might have consequences at least as serious as an over-issue of notes. The reserve of the Banking Department was not affected by legislation, but events have made the Bank of England the most important bank in the world. Public confidence in it is proverbial, largely because it is widely believed

that the State is behind it and would step in to prevent its failure. For this reason, the Bank has become the "banker's bank." All the arguments which show the necessity of a sufficient reserve to an ordinary bank apply with greater force in this case. All other English banks, private or joint-stock, London or provincial, have such confidence in the Bank that they keep their own private reserves with it; they wish to avoid the trouble of keeping a stock of coin or bullion, and so deposit all metallic money above what they require for immediate purposes where they can recall it at once in case of need. Now the Bank of England receives all these accumulated reserves, and deals with them as an ordinary bank deals with its deposits; it knows that while some deposits are always liable to be demanded, the proportion which will be demanded in normal times can be estimated fairly accurately. Thus the Banking Department lends out a large proportion of the money which is lent to it as accumulated reserves, discounting bills and holding securities instead of currency.

17. It follows that the huge volume of credit which is a leading characteristic of modern economic life is based on a comparatively small stock of coin and bullion in the Banking Department; some banks are beginning to keep a proportion of their own reserve, but the great bulk of it still remains in Threadneedle Street. The Bank is thus exposed to the same danger from the banks as these are from their depositors; if the ordinary banks become nervous they may withdraw their money and the Bank Reserve will be depleted. There is a large stock of gold in the Issue Department, but the Banking Department cannot touch it; it cannot obtain its own notes from that Department, for the law demands that gold shall be given for them; it is

**The Bank
Reserve.**

probable that the whole of the uncovered issue which is allowed has already been circulated.

The difficulty may be far more serious even than is here suggested ; the English banking system is a single reserve system, and so the whole weight of any strain whatsoever must be thrown on the Banking Department. The Bank must fear, not only the extraordinary demands of the banks, but also those of the bill-brokers, the private individuals who carry on a keen competition with banks for discounting business. Such men borrow most or all of their trade capital, and though they pay only a low interest for it, as it is lent on short notice, they must utilise it in some way ; the bill-brokers are more dependent on the market conditions for money than are the bankers, and are thus a better index of the state of the market. If there is serious stringency, the bankers will call in their short loans, and the bill-brokers will be obliged to take their securities to the Bank ; the brokers must have money to meet their engagements, and securities, however good, are useless in such times ; the Bank must discount the securities of these men or a collapse may be engendered by a dislocation of credit.

Before the war, London was the financial centre of the world. Large foreign deposits were held by the Bank, and this fact enormously added to the danger of a serious crisis. First, the Bank was peculiarly susceptible to hostile action on the part of foreign financiers ; a foreign Government, for example, might have collected large deposits in London, and then suddenly withdrawn them. Again, there was always a real and lasting danger that the foreign demand for bullion might be abnormally large just at the time when for some reason, *e.g.* holidays, the reserve of the Bank was below the normal.

18. The reserve in the Banking Department has been in serious danger on three occasions between 1844 and 1914, and on each occasion permission to break the law was given by the Government. In 1847, the reserve fell to little more than a million pounds; the reserve in the Issue Department was untouched, but was unavailable. Now credit was not so shaken that Bank of England notes were regarded with suspicion; the Bank note was as desirable as the metallic money it represented. In the last resort, the reserve in the Issue Department was so large, that if available for use it would probably have restored confidence even if the note had come under suspicion. Fortunately, the actual gold was not needed, for notes were even then an efficient substitute.

The Bank received a letter of licence, allowing it to borrow from the reserve in the Issue Department; the mere fact that the Bank was allowed to do this calmed the fears of the community, and a disaster was averted. In 1857, the reserve fell below a million pounds, and again permission was granted to make use of the Issue Department; this time, the excess fiduciary notes were actually issued, and the crisis subsided. After 1860, the Bank made use of its discount rate to increase the reserve in critical times; probably a crisis was thus averted in the early sixties, when large amounts of silver were sent to India to pay for raw cotton. In 1866, the reserve was large enough for normal conditions, but a crisis occurred through the failure of Overend, Gurney and Co., the best known private bank in the country; again the Government gave permission to circulate uncovered notes. Since that time, the law was never broken till 1914, when an issue of three million such notes was quickly put into circulation. This issue would have had a trifling influence on public

confidence, but it was quickly followed up by an issue of notes direct from a Government department; to-day, the treasury note has displaced the gold coinage, as regards actual circulation. Present financial conditions are abnormal, but an ultimate return to a real gold standard is probable.

Another feature of the Act was the fact that the Bank was made to buy gold when brought to it, at the rate of £3 17s. 9d. per ounce of standard gold, this being 1½d. per ounce less than the Mint price. Dealers avoid trouble and delay by accepting Bank notes at this rate rather than waiting for the gold to be coined at the Mint at the slightly higher rate; thus the issue of notes, like that of gold coin, is unlimited. When convertibility was real, however, it was possible to keep a balance between the amount of coin and notes in circulation, for an excess note issue would come back to the Bank for redemption.

19. The Act further obliged the Bank to publish weekly **The Weekly** accounts in a standard form. An example **Account.** is given on the next page.

In the first balance sheet, the notes issued must include those held by the Banking Department, for the two departments are separate. The first item on the other side refers to the perpetual debt owed to the Bank by the nation. "Other Securities" are the securities against which the remaining fiduciary notes are issued; the notes issued against the Government Debt do not alter in amount, while the other fiduciary issue may increase till the issues of the other privileged banks have all lapsed; the sum of these two values cannot, under given conditions, be greater than a fixed maximum.

The amount of gold coin and bullion depends on the amount of metal exchanged for notes; this item varies, *e.g.* Bagehot quotes the figure of 18 millions for 1869.

The second balance sheet resembles that of an ordinary bank; the main peculiarity is that it can hand over seven million pounds worth of other securities and receive notes from the Issue Department in exchange. The "Proprietors' Capital" is a constant amount, and the "Rest" consists of undivided profit which never falls below three millions.

ISSUE DEPARTMENT.

Notes Issued ...	£140,119,055	Government Debt	£11,015,100
		Other Securities	£7,434,900
		Gold Coin and	
		Bullion ...	£121,669,055
		Silver Bullion ...	
	<u>£140,119,055</u>		<u>£140,119,055</u>

BANKING DEPARTMENT.

Proprietor's		Government	
Capital ...	£14,553,000	Securities ..	£63,789,255
Rest .	£3,072,409	Other Securities .	£96,018,994
Public Deposits,		Notes	£12,315,080
including Ex-		Gold and Silver	
chequer, Sav-		Coin	£1,526,399
ings' Banks,			
Commissioners			
of National			
Debt, and divi-			
dend accounts ...	£21,249,755		
Other Deposits ...	£134,762,490		
Seven day and			
other bills ..	£12,074		
	<u>£173,649,728</u>		<u>£173,649,728</u>

Dated October 7th, 1920.

The "Public Deposits" resemble ordinary bank deposits, but they represent money deposited with the Bank by the Government; so far, the relation of the Government to the Bank is that of a depositor to an ordinary bank. "Other Deposits" represent the money belonging to private indivi-

duals or corporations ; as before explained, the Bank manages the finances of the State and also holds the reserves of other banks. In keeping these deposits, the Bank performs a useful function, and pays no interest on them ; on the other hand, they must to a large extent be kept idle.

Among its assets, the Bank holds interest-bearing securities. It keeps Government securities, but its holding of "Other Securities" is usually limited to the "gilt-edged" variety, *i.e.* those which possess such confidence that they are practically as desirable as money itself. In times of crisis, the Bank may relax its usual rules, and lend money on securities which it would not ordinarily accept.

20. In normal times, the two remaining items are of world-wide importance, for together they constitute the Reserve of the Banking Department, and the movements of this Reserve used to influence the money markets of the world ; if the Bank Rate was low, money tended to be cheap in every civilised country, and *vice versa*. Though the Bank proprietors received a lower dividend when much money was idle, opinion in financial circles was so insistent that the Bank dare not let its reserve become too low ; if the ratio of reserve to liabilities fell much below two-fifths, there was uneasiness, until the Rate was raised and money flowed in from abroad. The bulk of this Reserve consists of notes ; the ratio between notes and coin is, very roughly, about ten to one.

21. The connection between the Bank and the ordinary banks may now be better understood. A bank may be in a difficult position through bad management, in the sense that many business firms fail through inefficiency. There are occasions, fortunately now rare in this country, when a bank is really insolvent. Usually, however, a bank is in

Importance of
the Reserve

General view
of Banking
System.

difficulties, not because it is in an unsound position, but because its assets are not in a "liquid" form. If a bank uses all its money to buy even the most excellent securities which will yield a safe and profitable return at a future date, it will make a great mistake; if it has no actual money to pay out when required, its most valuable asset, its credit, will be irrevocably lost.

If a bank avoids such securities altogether, it cannot make good profits; there is keen competition for those securities which mature early, for they are practically ready money, and there is little advantage in buying them to hold for a future profit. Banks must therefore compromise; they will hold as many long-date securities as may be safely held, for they yield a safe and certain profit if the security is good; they must, however, keep control over so much legal tender that their possible profits are greatly diminished. The competition for "liquid" securities, i.e. those which are quickly turned into money, sends up their price. The market rate of discount for bills ready to mature is lower than for those of long date; so also the rate of interest paid on money borrowed for a very short period is distinctly lower than that paid for deposits on which a notice is required for repayment. If a man keeps a deposit account at a bank, he receives interest; if, however, he has a cheque book, and can draw on his current account without notice, the bank will normally charge for the privilege, and may pay no interest at all. So also, if a banker finds his reserve too low, he will not wish to discount long-date bills, however ultimately profitable they may be, but will be willing to buy short date bills at a lower rate of discount.

22. This is seen clearly in the case of a panic. At such time, a bank will discount few new bills, however profitable, for this would mean paying out money in exchange for a future profit, when the

Panics.

present control of legal tender is essential; it will welcome deposits whose repayment requires a long notice, and refuse loans on which customers may draw cheques. It might discount a bill ready to mature in a day or two at 5 per cent. per annum, while it might require 10 per cent. or more in the case of any long-date bills it might be persuaded to discount.

Every bank in the country is in danger when a financial panic occurs; the danger then lies, not in insolvency, but in the appearance of it. If the public believes that a bank can meet all demands on it, then there is no immediate danger; on these occasions a bank must freely part with legal tender, for a reluctance to do this might undermine confidence and precipitate a crisis. First, the bank relies on its till money; as this is the normal amount required at ordinary times, it will not suffice if nervous depositors are clamouring for money. The bank immediately calls for its reserve, usually deposited, in part at least, with the Bank of England. Demands may have been met by the use of the reserve, but more money yet may be required; the bank then calls in its loans at "call" or at short notice, and waits for bills to mature; if the liquid assets are not sufficient to meet the demand for money, the bank must close its doors unless it receives help from the Bank of England or other body which can lend money to tide over temporary difficulties.

If, however, all banks are in the same position, all the banks may require their reserves from the Bank; in that case, not only can the Bank render no assistance, but its own position may be threatened; the importance of the store of legal tender in the Banking Department may now be more fully realised, for this reserve is less than would be the sum of the reserves kept by a number of banks, if each bank kept its own. A panic may begin at a certain

point, perhaps following a business failure, and may spread till it involves the Bank; on the other hand, it may begin through the alarm felt when the Bank reserve has run too low.

23. A financial panic may be commercial in its origin; there is a close connection between financial conditions and the state of trade. It will be seen later that a sudden excess of imports, caused perhaps by a decline in food production may force money out of a country, the only large stock of hoarded money in the country is in the Bank; the metallic money in the Issue Department cannot be touched; thus it follows that exported money must ultimately lower the reserve in the Banking Department, unless it is taken from circulation. Normally, a large export of gold (before the war) meant the danger of diminished reserve, with the possibility of financial troubles.

Again, there are periods of "over-trading" in industry, when manufacturers are so optimistic that they produce more than the market justifies; employers borrow money from banks, and produce on credit, hoping they will obtain large profits even though they are paying a high price for the loan of money. If demand for goods slackens, weaker men may be ruined and depression may succeed confidence; credit will be shaken, and bankers will try to reduce the loans they have made to employers. The insecurity felt in industrial circles may extend to the banking community. When bankers begin to refuse to advance money to employers even on bills of good security the depression is accentuated; on the one hand, employers are obliged to restrict output, and on the other the excessive caution of the banks leads to feverishness in the money market; thus a severe commercial depression produces effects which could lead to a dangerous financial panic.

The danger is greatest when trade is just past the acme of prosperity; deteriorating trade rather than bad trade is to be feared in this connection; commercial crises tend to follow trade booms.

A commercial crisis may arise either through over-production caused by a trade boom or through some calamity such as the comparative failure of the world harvest. Trade moves in cycles, and the explanation has been sought from both standpoints. First, the entrepreneur class is optimistic in good times and pessimistic when trade is bad; if prices are rising, an employer continuously obtains more for his product than it cost him, and he usually overestimates his real gains; thus he borrows more money and increases production. When his spell of prosperity is broken, he is unduly depressed, and production sinks too rapidly, after a time, demand is reasserted, and it is again profitable to extend production. Thus the cycle is completed.

Jevons' Explanation of Crises 24. Jevons' famous explanation attempts to explain cyclical fluctuations by a reference to world harvests. Jevons noticed that commercial crises tended to appear every ten or eleven years; he supposed that periodical sunspots were followed by bad harvests, necessitating an outflow of gold from food-importing countries like England, for prices would be high. Since his time, crises have been commoner and less acute, but this fact does not invalidate his theory, as our food supply is now more certain, being gathered from many diverse countries.

In any case, it is true that the real immediate cause of a financial crisis is the combination of excessive credit facilities with an event or a state of feeling which leads to a collapse of mutual confidence; in the height of prosperity an event may occur which shatters credit.

25. The vexed question of the effect of rising prices on industry may here be considered. The effect of rising prices on industry. is undoubtedly tonic in the case of large-scale industry; the employer pays his costs at the earlier and lower prices, while he is paid at the later rates, the effect may be so marked that some men believe that continuously rising prices are favourable to the people at large, through their stimulating action on trade. It is not likely, however, that this effect could continue indefinitely; if the rise continued, labourers and suppliers of raw material would make allowance for it, and employers would compete so that the artificial profit vanished, costs would rise, and commodity price might fall relatively to them.

There are also serious objections to such a stimulant of production; a change in general prices distorts the facts of economic life; when prices are steady, relative values supply a useful guide to the amount of each commodity it is advisable to produce. Rising prices stimulate the production of those things whose manufacture provides the greatest profit; capital and labour will flow to those industries which can best utilise rising prices, not to those which produce the articles in real demand. So far as rising prices stimulate energy and inventiveness, they have a good effect; so far as they merely transfer capital, the effect seems to be bad, and over-production will lead to a fall in price, followed by a depression in the industry which had been stimulated. In practice, also, periods of rising prices alternate with periods of falling prices; the effect of falling prices on manufacture is usually to cause an under-production of goods which would normally be produced in larger quantities. When prices rise, a general over-production is conceivable; this does not mean that there is too much of everything, but that the people who

have produced commodities have produced so much that they have forced down the demand price; producers may actually lose on their enterprises, because material goods have depreciated in value compared with services. Usually, however, the effect of rising prices is partial; as labour and capital are attracted to certain trades, other trades suffer on account of the artificial prosperity of certain branches of industry.

Rising prices generate a feverishness which causes manufacturers to lose their sense of proportion, and to make mistakes as to the amount of any particular commodity demanded by the community. They are undoubtedly responsible for much of the fluctuation which is so familiar in present-day production. Again, rising prices are a great hardship to men of fixed incomes, or of incomes which rise less quickly than prices. The labourers in a prosperous industry can usually share in the higher profits, though increase of wages usually lags behind that of profits. Often, however, this end is reached only as a result of industrial war; an era of rising prices is usually a period of strikes. On the whole, there seems little doubt that one of the most desirable reforms of the present industrial system is the institution of some method by which general prices can be stabilised. If the money standard were perfect, one of the most potent causes of crises and industrial unrest would be removed. Falling prices are equally obnoxious, for they depress industry. The trouble is not caused by high or low prices, but by changing prices.

26. The structure of the English banking system may now be considered. Though no new banks may issue notes, there is no obstacle to the development of other banking business. In fact, however, it is very difficult to start a new bank, and the number of existing banks is being

gradually reduced by amalgamations. The old private banks are diminishing in importance, and their place is being taken by branches of joint-stock banks. Private banking is so risky, that no man of means is willing to be liable for the whole of his wealth, while poor men would inspire no confidence; a joint stock company can easily find the necessary capital, and men of means are responsible only to the extent of their holding; the limited liability principle is peculiarly adapted to banking concerns.

Banking, again, lends itself to company management; the work is mainly of a routine character, and does not call for much enterprise or for unorthodox methods; it does not require the entrepreneur spirit. Thus, internal economies are favoured by amalgamations, and so English banking is to-day mainly in the hands of the Bank of England and the other great joint-stock banks. The private bill brokers still flourish, because they have an intimate knowledge of bills which the manager of a bank cannot hope to rival, but their success depends on specialisation. Other branches of banking are successfully carried on; the great success of local co-operative banks in Germany is partly reflected in successful Building Societies and similar institutions in this country. Finally, the insurance houses perform much work which would otherwise be undertaken by banks. There may be two opposing tendencies in the future; first the tendency towards further amalgamation, and next the growth of new banking forms on the lines of the German co-operative banks, *e.g.* the localised Raiffeisen banks, or the Schulze-Delitzsch banks, making a wider appeal. Co-operative banks have the great advantage that they are in touch with local conditions, and thus can grant loans safely at a

favourable rate. Such banks have stimulated agricultural development in Ireland, and have made some progress in this country.

27. Industry is financed by banks to a large extent, but a large amount of capital is obtained directly from the public. If a company desires a loan, it issues a prospectus, setting forth its hopes of future profit. The public is invited to buy shares. In time, the investor finds that he has made a good or bad investment, for the dividend, *i.e.* interest, he receives may be more or less than was expected when the loan was floated. Thus the security which the lender receives will fluctuate in value as the dividend alters, and as the prospects of future prosperity change. The men who specialise in transactions in shares and stocks (which present technical differences from shares) are called stockbrokers and stockjobbers. The latter buy and sell stocks on the floor of a Stock Exchange. The most important Exchange is the London Stock Exchange, but there are others in provincial towns.

Industrial securities are of various kinds. They may be an ordinary receipt for money lent. Bonds are often secured by a mortgage, especially in the case of companies — (bonds are also issued by public authorities). Debentures are less often secured by a mortgage, but railway debenture holders can wind up the company if the interest is not paid. Debentures may be repayable at a fixed time, or only on the winding up of the company. The interest is defined, and does not rise above the given limit; the debenture holder, however, has a first charge on profits, as the shareholders receive nothing till the interest is paid on money loaned.

Stocks and shares in the strict sense of the words represent the holdings of shareholders rather than lenders. They may be divided roughly into two groups, preferred

and ordinary. Preference shares usually pay a fixed dividend, which is paid before the ordinary shareholders receive anything, though it is not fully paid if the debenture holders have not received their interest; the latter must be paid in full before shareholders obtain any dividend at all. Ordinary shareholders normally receive the surplus when every other charge has been met; the dividend is not fixed, and may vary between wide limits. If there are "cumulative" preference shares, their owners are paid arrears of dividend before the ordinary shareholders receive anything; sometimes also, the preference shareholders may receive a share in a second distribution if the residual profits are very high. There are numerous varieties of shares, and these admit of no simple classification.

The Stock Exchange. 28. To some degree, a Stock Exchange is a mere gambling institution. A "bull" buys stock he hopes will rise in value, and hopes to obtain a profit by selling at the higher price. A "bear" hopes that the price of a stock will fall; he sells stock which he may not possess, hoping to buy it at a cheaper rate when the delivery day falls due. Dealings in "futures" have been considered in connection with corn markets; if the speculative price is given for an article not yet on the market, there are possibilities of great gain or loss. Such dealings are often combined with "option" transactions; the "put," the "call," and the "put and call" are examples of options. The "put" is the right to buy a certain number of shares at a certain price within a certain time; the "call" is the corresponding right to sell shares; the "put and call" is the right to exercise the privilege of buying or selling shares as the holder of the option chooses. The gambler has every opportunity for speculation; again, the prices of shares

are continually fluctuating, not only because there is a real change in their value as the dividend obtainable from them alters, but also because deliberate efforts are made to control share prices; the "bulls" try to force up prices and the "bears" to bring them down. Combinations of speculators may exert great influence on price of securities either by manipulation of the stock market or by "cornering" of commodities. Stock Exchanges may do immense harm.

29. Yet speculation has its beneficial side; a reputable exchange does more good than harm in most cases. As speculators specialise in uncertainties, they perform a service which would otherwise fall on sober-minded men who wish to be relieved of risk. Competition between speculators tends to equalise the market value of a security and its real value; investors find that they may buy any security they choose, from gilt-edged Government stock to worthless scrip which is merely an opportunity for gambling in the rapid change in its price, and again to securities which give a high but unsafe rate of interest. If an investor deals with a reputable broker, he can buy any stock which the broker can obtain from the jobber who buys and sells the stock in an exchange. The relation of the broker to the jobber resembles that of the solicitor to the barrister; professional etiquette is equally binding, and the investor need have no fear of his money if he deals in gilt-edged securities, though they usually carry a comparatively low rate of interest. Much of the money invested on an exchange is as safely secured as if deposited in a bank.

30. Money may be loaned by the public without the intervention of the Stock Exchange; this usually happens in the case of new businesses or extensions of old

ones. Company promotion is an example; a promoter may perform a public service in combining businesses, and so initiating large-scale economies. He buys options of the various businesses, and then tries to "underwrite" the issue, *i.e.* persuades banks, etc., to take part of the shares at a discount, thus obtaining a certain sale for part of the stock. The issue is then offered to the public; a dishonest promoter "waters the capital," *i.e.* creates more stock than the business is worth; thus the promoter will gain at the expense of the shareholders, who will find the price of the stock fall at a later date, for the business will not normally pay a good interest on the artificially inflated capital.

Company Promotion. 31. Government debts are especially prominent at the present day. In normal times, a government may temporarily be in need of money for the payment of its debts, in war time, it must be financed largely from loans, whose repayment may be postponed indefinitely. Such money must be obtained from the same sources and substantially in the same way as money required in business. As, however, the State is more permanent and possesses greater confidence than any private business, the National Debt has become a permanent institution, and has increased in amount, though its relation to national wealth is more constant. In peace time, it is gradually reduced by a Sinking Fund. The "Funded Debt," *e.g.* "consols" (consolidated stock), and the permanent debt to the Bank of England carries a given interest (occasionally converted), which is charged on particular taxes; the Unfunded Debt is repayable at a given time; a Floating Debt consists of short-time loans. The Government can obtain temporary supplies of money by means of Ways

Government Loans.

and Means Advances (from the Bank), Treasury Bills, or Exchequer Bills. During the war, the Government was compelled to appeal directly to the public, which subscribed to the various war loans readily and freely.

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Hirst Stock Exchange.

CHAPTER XVIII.

INTERNATIONAL TRADE

1. The theory of trade within a market in which competition is active has been already considered. Mobility of capital and labour is never so absolute as was sometimes suggested by the classical economists, but the theory of the working of unrestricted competition leads to results which are near enough to the truth to provide a valuable picture of economic life. International trade appears at first sight to be governed by principles different from those observed in internal trade; more detailed study shows that the differences are of degree rather than of kind.

Demand and supply cannot work out their full effects where foreign trade is concerned. Those examples of economic friction which are always present even where competition is keenest attain an especial prominence where commodities must cross national boundaries. First, there is the physical obstacle to commerce; where ocean transport is carried on, it must overcome great difficulties; thus a far greater degree of inequality between conditions of production in different countries is necessary to stimulate commerce when the countries are widely separated than when they are adjoining; so, the obstacles to trade between Lancashire and Yorkshire are much less than those between England and France. The natural difficulties may be increased by artificial barriers to trade, either through

prohibitive laws, as in war time, or through customs duties or protective tariffs.

2. There is a very serious obstacle to the migration of labour from country to country. Language differences are often prohibitive, while feelings of patriotism help to keep men in their own country. For every man who will so change his habits as to go to work abroad, there are a hundred who will move from district to district within a country. Even though a relatively small migration is necessary to equalise the conditions in two countries, neighbouring states may persist for generations in standards of life which are markedly different. The amount of migration between France and England is, comparatively, very small. Canada exerts a far greater attractive force to British labour than does France, but conditions are not yet equalised. If the opportunities which Canada offers to British labourers were available at home, a great redistribution of economic activities would take place.

3. Mobility of capital is a less important factor, but demands consideration. Men who refuse to leave their own land may invest capital abroad, but a home investment is usually preferred to a foreign. A foreign loan must offer a much higher rate of interest than a home loan; not only is there a real risk of loss of interest, and even capital, but an investor feels a sense of insecurity when money is invested abroad; even when a country is crying out for capital, and is able to pay well for it, it cannot obtain it from (say) England as easily as can borrowers in this country. The want of capital is, however, no permanent obstacle to the development of a new country; sooner or later, capital is attracted.

Under present conditions, a very serious obstacle to international trade is found in the differences in economic

environment from country to country. English manufacturers have been slow to study foreign customs, and so opportunities of trade have been lost; the demands of English consumers may be accurately studied, but foreign demand is much more speculative. A more widely diffused knowledge would increase trade. A very important difference of this kind is found in the existence of national weights and measures. There is a tendency to uniformity, but as long as differences exist, so long will a needless obstacle to trade be continued.

Currency differences are still more important. The English currency is quite different from continental money, and exchange is thereby hampered; if an English manufacturer wishes to sell goods in France, he must know the value of the French money unit in English money. Again, a money which is acceptable in England may be almost useless in France; before the war, an English sovereign was generally acceptable abroad, but token money, *i.e.* copper and silver coin, had no purchasing power at its face value. Even gold coins which were acceptable throughout Europe could not be used extensively in foreign trade; the bulkiness of metal and the cost of insurance were obstacles to the use of gold as an international medium of payment. There is no universal metallic money, and even if it existed, difficulties of transport would prevent its extensive use as payment medium.

4. These difficulties are overcome in the same way as are the similar, but less pronounced obstacles to internal trade. The gradual growth of credit substitutes for money has already been noticed, and the extent to which metallic money is substituted by paper has been emphasised. A similar development has taken place in international trade. At first sight, it would seem that more gold would be

**Foreign Trade
a form of
Barter.**

circulated in foreign trade than in home trade; as credit is less fully developed between different countries, it would appear that a foreign creditor will be more likely to insist on payment in gold. In fact, however, the obstacles to gold shipments are so great that by far the greatest amount of international indebtedness is settled without the passage of actual money.

In effect, international trade is a developed form of barter. Certain countries have natural advantages in the production of certain commodities, *e.g.* fruit-growing in Spain; others have had advantages in the past, and economic inertia, *i.e.* the absence of perfect mobility of labour and capital, is responsible for the persistence of certain industries in countries which have lost their initial advantages. Further, the doctrine of comparative cost is especially applicable to international trade. If England can make cotton three times as cheaply as foreign countries, but wool only twice as cheaply, it will pay this country to concentrate on cotton production and buy its wool from abroad, even though it could make it more cheaply at home. Thus each country, considered as a single unit, has large stocks of commodities which it can make well and cheaply, and which are present in superabundance; each country needs goods which others are able to supply; trade will inevitably take place, unless artificial obstacles are set up. If labour and capital were quite immobile, every country would specialise in certain commodities, and foreign commerce would be almost indispensable; the relative mobility of capital and labour has made it possible for most civilised countries to make most of the commodities in general use.

The modern form of barter necessitates a standard of value, if not a material medium of exchange. Before the war, this standard was, in most cases, gold. Present conditions

are abnormal, and, unless expressly stated, the description which follows will apply to the conditions existing in the years before 1914. A sovereign was acceptable in foreign countries (in certain circles, *e.g.* in banks and at railway stations) because it contained a fixed weight of gold; it was valued not as in England, for the stamp which converted it into a coin, but for its bullion value; it could be melted, and gold obtained from it. Silver coins had a similar stamp but, when melted, their bullion value was much less than their value as coin (in England); hence token coins were not international currency. Sovereigns were desirable, not as coin, but as bullion.

5. Gold bullion was thus the standard of value. The working of Gresham's Law may now be a little clearer. A bullion merchant who wished to export gold from England would choose his coins with care; suppose that the coins were badly worn, clipped or sweated (this of course was not the case in such recent times). He would buy the coins (by paying goods for them) at their face value, or near it; the lighter coins he would circulate in the country at their face value, but he would carefully sort out the heavier ones to be used for foreign payments. A foreign creditor would receive the coins at an estimated value determined by the bullion content, quite independently of the face value. Thus, in former ages, a new issue of coins was speedily removed from circulation, largely because the heaviest were chosen to be used for foreign payments.

In 1914, however, a sovereign was worth approximately its face value; thus it provided a rough standard of bullion value. Other countries had gold coinage, which could serve equally well as standards of value. Further, a direct comparison could be made between the gold coin-

Gold Bullion
the normal
Standard of
Value.

ages of different countries, provided that the coins were not in any way depreciated, though the actual export of gold is much less important relatively than in former times. Just as in former ages when the bullion value of a coin was below its face value, the gold coin was valued, in respect to foreign trade, for its gold content alone, though in 1914 it happened that the face value of a sovereign was practically its real value also. Thus trade could be placed on a basis of gold payments if a fixed relation existed between the gold coins of different countries.

6. The Mint Par of Exchange showed this relation; if the amount of pure gold in a sovereign was calculated, and also that in the gold coin of another country, a comparison between the bullion value of the sovereign and (say) the franc might be made. Thus the Mint Par between London and Paris was at the rate of £1 = 25 22 francs. French merchants were willing to receive English sovereigns at about this rate, for a sovereign was worth about 25·22 francs when melted down as bullion; in the same way, an English merchant was ready to receive French gold at about this rate. There was a similar par of exchange between every pair of gold-using countries, provided that the amount of pure gold in the coins of each country was fixed and definite. In the case of two countries which had an identical coinage, as often (but not always) occurred in the case of a mother country and its colonies, the term "mint par" was meaningless, for transactions might be carried on indifferently on the basis of the coinage of either country.

No definite Mint par of exchange exists between a gold- and a silver-using country; at any particular time, the relation between the value of the sovereign and of a silver standard coin in another country might be accurately

determined, but a mint par so obtained would be liable to variation. If the value of silver in terms of gold were constant, a true par could be obtained; it would only be necessary to estimate the value in gold of the amount of silver in the foreign coin, and the par thus calculated would not change as long as the weights of bullion in the respective coins were unaltered.

Still less is it possible to obtain a definite par of exchange between countries one or both of which have a paper standard. If a country has only a note issue, not based on a metallic reserve, and not convertible, the amount of money in circulation will depend on the degree of restraint exercised by the issuing government; thus an inconvertible note issue is very liable to depreciation; this drop in the value of the standard money is recognisable in the rise of price of gold bullion, when prices are measured in the depreciated paper. Thus the temporary par of exchange between a gold- and a paper-using country can be obtained by estimating the amount of foreign paper money obtainable for the amount of gold in the coin of the home country. The gold in a sovereign would formerly have bought a certain number of Argentine notes, according to the price of bullion in that state. Such a par of exchange was liable to considerable fluctuation. The par between two paper-using countries was obtained by comparing the number of notes to be obtained for a definite weight of gold; suppose that England and France had only paper money, and that an ounce of gold cost £10 (in paper) in England, and 300 francs in France; the par of exchange would then be £1 = 30 francs. The present condition of the exchanges is due largely to the fluctuations caused by variations in the note issues of various countries, though other important factors are also present.

7. Although gold bullion is the standard of value in international trade, bills of exchange are in normal times the actual media; there are certain securities which possess universal confidence and can be used to pay debts in any part of the world, but in normal times such securities are usually trade bills rather than long-date loans. Under certain conditions, bullion is used as an actual medium of exchange, but the use of gold is generally a temporary expedient.

Bills are to foreign what cheques are to internal trade. Bills are used to pay internal debts, but they are far less convenient than cheques, and their chief use is that of an international gold substitute. Like metallic money, bills are at once a medium of exchange and an ordinary species of commodity; this combination of properties is the cause of the peculiarities exhibited by international bills. The value of a foreign bill depends not only on the degree of security, on the current rate of interest, and on the length of time it still has to run, but also on the demand for bills to pay foreign debts.

Suppose an English merchant wished to pay for a consignment of Parisian fancy goods. If necessary, he would sell some of his goods in England, and demand gold in payment; he would ship the sovereigns to France, and they would be credited to him at the rate of 25·22 francs per sovereign; a further payment would have to be made for insurance and transport. If the value of the goods was very large, the total cost of transport and insurance might be serious, and, in any case, the procedure would be most inconvenient. When possible, the merchant would buy a bill; he would go to a bill broker and try to obtain a bill drawn on France, *i.e.* a demand made by some English creditor, and accepted by a French debtor. If successful, he would buy the bill, if its cost was less

than the total expenses of sending the equivalent amount of gold.

8. The market price of such a bill would depend on the face value of the debt it represented, on the rate of interest, and on the date of maturity.

**Market Price
of Bills.**

If, however, the bill broker had a limited supply of bills on France, and many customers wished to obtain such bills, he could hold out for a higher price than would be offered by a discounting house; in such cases, the price of bills on France would rise above the normal rate. If, on the other hand, such bills were abundant, and relatively few people wished to send money to France, such bills would be a drug on the market; the broker would pay a lower price for them than if he required such bills merely for investment, and his customers, for the most part, would have no use for them; hence the market price of such bills would fall.

Thus the market price of bills fluctuated about a mean level; the normal price depended on considerations of interest, but the fluctuations were influenced by changes in the relative volume of trade. There were sharp limits to the fluctuations; if the price of bills rose higher than the total cost of sending gold abroad, a home creditor refused to buy a bill, sending sovereigns or bullion. The cost of sending gold was about 10 centimes per sovereign; if the price of bills rose above the normal price so that a sovereign would only buy a bill for 25·12 francs, gold began to flow out of the country; £1 = 22·12 francs was the *Outgoing Gold Point*; if the process continued, it was profitable for bullion merchants to export gold.

If bills were so cheap that their price fell below that at which £1 was equivalent to 25·32 francs, the reverse process took place. When bills on France were cheap in this country, it followed that bills on England were dear in

France ; when bills were cheap here, the fact was due to the existence of a relatively small number of traders who wished to send money to France, while when bills were plentiful, many French traders owed money to England. Thus French traders had to pay more than the normal price when they sent remittances here ; if the price they had to pay for bills was greater than the total cost of sending bullion from France to England, gold would be sent here. Assuming that the cost of sending gold from Paris to London is the same as from London to Paris, it follows that when the price of bills on France in this country fell below the approximate rate £1 = 25·32 francs, gold came in to the country. This rate was the Incoming Gold Point.

9. The price of bills is thus bound up with conditions of trade. As the amount of gold sent abroad is relatively small, and as bills act simply as a medium of exchange, it follows that foreign trade is a process of exchanging goods against goods ; broadly speaking, it is true that imports and exports must balance each other. When a country exported more gold than it imported, it followed that the value of its exports were less than that of its imports by the bullion excess. It is not, however, correct to suppose that a kind of balance-sheet is drawn up between two countries, and that gold is sent to adjust the balance. It is true that international trade is managed on the principle of a gigantic clearing-house, but there is no deliberate adjustment of credit and debit. Bullion is one among many other commodities, and is exported under certain well-defined circumstances ; the doctrine that exports are equal to imports simply means that the exports of a country, including bullion, are equal to its imports, including bullion.

**Relation of
Imports to
Exports.**

This barter theory of trade seems to break down when tested by experience; if the official values of the imports and exports of a particular country are compared, they will never be found to agree exactly, and in many cases the difference in the two values is very great. This difference is, however, inevitable; statistics are based largely on the records of customs houses; many mistakes are certainly made by officials, while exporters may have an interest in disguising the real nature of their goods; again, there is no consistent method of valuing imports, as some figures may include cost of transport while others do not. Under present conditions, it is impossible to obtain an exact valuation of either imports or exports.

10. More important is the case of exports which do not figure in customs statistics at all. Before the war, England apparently imported a far greater value of goods than she exported; this also held good for some other countries. New countries, however, like some South American states, might consistently export more goods than they imported; the explanation is found in the phenomenon of "invisible exports." A typical example is that of interest on money invested abroad; England had lent large sums of money to developing countries, and required an annual interest; it was open to foreign debtors to pay interest in gold, but it might be more convenient to send a bill, a promise to pay made by some Englishman, probably for foodstuffs sent to England from the country in question. An Argentine cultivator might send corn to England, receiving a bill in payment; this bill he could send in payment of his own debts, or sell it to another debtor. Thus, the interest on the money loaned would be paid in effect, not by the transfer of gold, but by export of corn. The corn would appear in the English customs lists, but would not

Invisible
Exports.

be balanced by any material export from England to the Argentine.

The fact that England was (even more definitely than at present) the world's carrier was responsible for an enormous body of invisible exports, paid for by material commodities. The payment due to English merchants for freight was paid in commodities; as before, a debtor would normally send a bill rather than bullion, and such a bill would represent an export of goods from the debtor country and an import into England; the process might be more complicated than here suggested, but the final result was the same as if debtors directly sent goods to England instead of bullion.

Again, London was the world's financial centre, and the enormous business carried on brought commissions to brokers and bankers which were normally paid for by bills, and therefore by goods. These are the main examples of invisible exports, but there are many other factors which show that little reliance can be laid on government statistics for the valuation of exports and imports. Every country is affected by invisible exports or imports; some countries used to be permanently debtor, and others, creditor countries.

11. The variations in the price of bills may now be a little clearer; for simplicity, suppose that two countries only are affected, and that the first country, *A*, exports more goods to *B* than it imports from it. Then, in *A*, there will be a large number of bills drawn on *B*, for *B* will contain more debtors than creditors; in *B*, there will be relatively few bills drawn on *A*, as not many men in *A* will owe money in *B*. Thus, in *A*, a few debtors will compete for an abundance of bills, and so the price will fall; in *B*, a large number of debtors will compete for a few bills, and

**The Flow of
Bullion.**

the price will rise above the normal. This result may be generalised. In a creditor country, *i.e.* one in which the exports are exceeding the imports, bills will be cheap; in a debtor country, they will be dear. Thus, if debtors are many, bills are dear, and if the gold point is passed, the balance of indebtedness will be paid in gold; if there are more creditors than debtors, the price of bills may fall below the incoming gold point, and gold may flow in.

Thus a flow of gold is the result of one-sided indebtedness; the movement of bullion is the same as would take place if a nation were deliberately to export bullion in order to balance its accounts; the object is achieved quite as effectively through the play of self-interest exhibited by numberless individual merchants. Total exports cannot permanently differ in total value from total imports; if in any way a country temporarily imports more commodities than it exports, forces which tend to expel bullion will come into play; under normal conditions, indebtedness shows itself in a scarcity of bills which, when very marked, is accompanied by the necessity of export of gold.

12. This question needs to be studied the more attentively because it was responsible for the **Mercantilism.** growth of a theory of international trade which is now discredited, but which still persists in various guises. In mediaeval times, a supply of bullion was essential to any State, for credit facilities were not then developed; in warfare, the side which obtained control over a large store of bullion had a great advantage; added to this was the conception, which has not yet disappeared, that money is the most important form of wealth, instead of a mere medium of exchange which gives control, to a limited extent, over goods which satisfy human wants more immediately. Thus nations attached

great, and often undue importance to the possession of large stores of precious metals.

There grew up a crude theory that it was advantageous to export goods and disadvantageous to import them ; in the former case, money was attracted into the country, and in the latter, was sent abroad. Thus it seemed that bullion could be attracted to a country by restraining imports and stimulating exports. The theory of the Mercantilists was less crude ; they were willing to allow the export of goods, if the final result was a net gain of gold to the country ; they looked rather to the balance of trade, and were satisfied if exports exceeded imports, so that a balance of precious metals was due to the country. So, in more recent times, the apparent excess of imports into this country over exports from it has led some men to believe that (before the war) England was steadily getting into debt or else being drained of gold. To many men, the loss of gold would seem to be a serious evil.

When it is remembered that gold is simply a commodity with a high but definite exchange value, these fears lose their terrors ; merchants attach no special value to bullion, except in times of financial crisis, for to them, gold is no more than an equal value of another commodity. Again, the attempts made by states to safeguard a huge store of bullion have usually failed ; first, an attempt to stimulate exports is successful only when imports are simultaneously encouraged, while the effective restraint of imports is found to discourage exports ; when foreign trade is considered as barter, these results are to be expected. Next, a successful attempt to attract bullion sets forces in motion which tend to its re-export. A country might, with great difficulty and expense build up a store of gold ; it would have to be continually guarded, for it would be very profitable to export it.

Spain obtained much gold and silver from the newly discovered America, but, could not keep it, for Spanish merchants found that it was profitable to buy foreign commodities. Prices rose in Spain, so that Spanish goods were dear, while foreign commodities were cheap; thus imports into Spain were encouraged, while exports were hampered. The excess of imports over exports (other than precious metals) was so great, that bullion had to be sent in part payment; if a Spaniard had to pay a debt, he could do it most effectively by sending gold, which he could obtain relatively cheaply, to a place where it was relatively much more valuable. Thus, in time, the discoveries of new precious metals were diffused throughout Europe.

13. So also, before the war, London was the great market for gold from South Africa, etc., but this gold was not accumulated in London; London was the world's greatest free market for gold; if the gold had accumulated, prices would have risen, English goods would have become relatively dearer and foreign goods relatively cheaper; exports would have been discouraged, imports encouraged, the balance of trade would have turned against England, the gold point have been passed and the superfluous gold exported. If the State had tried to prevent the export of gold by laws designed to protect the store of bullion, some gold would have been smuggled away; so far as the laws were effective, the only result would have been the presence of gold in the country in place of commodities which gave a real and immediate satisfaction.

14. By the action of the exchange brokers, the total world gold supply used to be distributed among different countries according to their needs; occasionally gold was too abundant, and prices rose; at other times, it would be scarce, and a

London
formerly the
great Gold
Market.

Distribution
of Gold.

crisis occur; on the whole, however, the distribution was well carried out. The way in which superabundant gold was exported has already been investigated; a contrary process allowed gold to flow into a country which had less than its proper share. Suppose the gold supply in England was abnormally low, compared with other countries; prices would be lower in England than elsewhere (assuming that the amount of credit money was proportional to bullion); English goods would be relatively cheaper, while foreign goods would be dearer; imports would thus be checked and exports be stimulated; thus there would be more English exporters and less importers; there would be more English bills on foreign countries and fewer foreign bills on London; the latter would become dear, and finally the incoming gold point be reached.

These results can be easily translated into terms of relative value and of comparative cost. If there were no restraint on trade, natural or artificial, commodities would be exchanged until the scale of relative values was the same in each country; this is never attained in practice, but as long as inequalities exist, the forces tending towards equality will remain. Gold is a commodity, and the movement of gold from country to country will be in the direction which tends to equalise the relative values in the different regions. In marginal terms, there will be a tendency to equalise the marginal value of gold throughout the world. Where competition is supposed to be hampered, the same result will tend to occur; the comparative cost of silk and cotton may be 20 in England, and 15 in France; trade will then spring up, even if each country is immune from competition, and English cotton be exchanged for French silk till the relative marginal utilities are nearly equal in the two countries (cf. pp. 207 and 224). The same principle applies to gold.

Apart from the fear of a financial crisis, there is thus little fear of a dangerous drain of gold as long as the movement of bullion is unimpeded. Individuals exchange commodities because in that way the sum of the subjective utilities is increased; in the same way, the existence of international trade means an increase in the sum of the satisfactions received by the peoples concerned. If gold is draining out of a country in normal times, it may usually be taken for granted that the process represents an increase of total satisfaction in the country concerned.

15. The old view that a drain of gold is harmful is mirrored in the terms "favourable" and "unfavourable" as applied to the exchanges. Thus when bills on Paris used to be at a premium, imports were greater than exports, and the competition of importers forced up the price of bills. There was a movement towards that condition which forced up the price of bills above the outgoing gold point, *i.e.* there was a danger of that drain away of gold which in earlier times was considered as a misfortune. The exchange was said to be unfavourable when the price of bills (say on France) rose above the point at which bills could be bought at the rate of 25·22 francs for £1.

When imports were less than exports (to France), there would be keen competition among French importers for bills drawn on London, and their price would rise, and of course the price of bills on Paris would fall correspondingly on the London Exchange (it is supposed that the trade between England and France is direct, and that payments are also direct, *i.e.* bills are not drawn on a third country). If a Paris merchant had to pay more than (say) 25·32 francs for a sovereign, he would send gold. Thus when bills on Paris went to a discount in London, there was a

possibility of the inflow of gold, and the exchange was said to be favourable. Obviously, an exchange favourable for England (under the assumed conditions) would be unfavourable for France, and *vice versa*.

A peculiarity of most of the London quotations is that they are quoted in terms of the foreign currency; thus the exchange between London and Paris might be quoted at £1 = 25·30 francs, not 1 franc = 9½d. Thus a rise in the exchange quotation corresponds to a state of discount, *i.e.* a favourable state; the exchange thus rises to a discount and falls to a premium. These paradoxical expressions always hold where the quotation is given in the foreign currency. Where the quotation is made in the home currency, the exchange rises to a premium or falls to a discount. In any case, where bills are at a premium, the exchanges are unfavourable, and *vice versa*. When the figure 25·22 used to fall, the exchanges were unfavourable, and bills were at a premium; if the quotations had been 1 franc = 9½d., *i.e.* had been expressed in London in the home currency, bills would have been at a discount and the exchanges have been favourable when this figure had dropped.

The above account is simpler than the reality, even in respect to pre-war conditions. In practice, the simple principle is obscured by the fact that much trade is indirect, and the same applies to payments. England does not send cotton to Spain in exchange for fruit; each transaction is independent, and an English exporter has no direct knowledge of the goods which ultimately are sent in exchange for his cotton. In fact, it will be very unlikely that the exports from Spain to England will be the same in value as those from England to Spain, even when bullion movements and invisible exports have been considered. In theory, England could continually supply Spain with

cotton, while Spain sent no commodities at all to England directly, and yet exchange might remain at par.

Consider three countries, *A*, *B*, and *C*. *A* exports goods to *B*, *B* exports goods of the same value to *C*, while *C* exports other goods, again of the same value, to *A*; there is no other trade at all. Under these conditions, the exports and imports of each country would balance; *A* would import as much as it exported. Thus, although each pair of countries seem to present the conditions of bullion transfer, it is plain that when all three countries are considered, the debts may be settled without the passage of any money or bullion at all. If this were done, all the exchanges would remain at par.

16. In actual practice, it is then plain that the level of the exchanges is not determined merely by the amount of direct trade done between two countries. The mutual indebtedness of (say) London and Paris is incalculable on the basis of direct trade; it is settled, however, in practice, by the actions of bill-brokers, who have an intimate knowledge of the market. If imports into England from all parts exceed exports, while total imports into France are less than French exports, then the exchanges will move against London and in favour of Paris, and French bills will be dear in London.

The process of indirect payment introduces a further complication. A merchant might find it impossible to obtain a bill drawn on the country to which he wishes to remit money; an Argentine merchant wishing to pay a debt in Rumania would not be likely to obtain a bill drawn on the latter country, for there is little or no direct export of Argentine goods to it, so that there would be no bills in the Argentine accepted by a Rumanian firm. Accidental debts of this nature are common, and the difficulty is over-

come by sending a bill drawn on a great financial centre. Such bills drawn on a third country are very commonly used in other cases also; it may be that even when bills are procurable on the country to which money is to be sent that indirect bills are cheaper or more convenient. There is normally no permanent difference in price between a bill drawn direct on a country, and one drawn on a third country, for when it is cheaper to send money indirectly, the competition for bills on the third country tends to equalise the expense of the different methods of remitting money; this process of equalisation by competition is called "arbitrage" of the exchanges.

17. Before the war, when London was the world market for free gold, it was also the most important centre for bill transactions. In the above instance, the Argentine debtor would easily obtain a bill drawn on London; this he would remit to Rumania, and the creditor in that country would easily get a London bill discounted. The same would apply in the case of an arbitrage operation; the existence of London as a financial centre made it possible to equalise all exchange rates indirectly. In such cases, however, bills may be dispensed with; the growth of international credit and of financial houses has made it possible to remit money from country to country by means of book transfers.

The connection between bill broking and the state of the Bank of England Reserve used to be vital and important; to a less extent, the same held good of all banks which guarded a national reserve, but the difficulties of the Bank were increased by the fact that London was the only place in the world where unlimited gold could be obtained. In Berlin, for example, obstacles were placed in the way of those who wished to obtain a large amount of bullion.¹ Sometimes a bank bought gold in the market by sale

¹ As at the Bank of England at present.

London the
great Bill
Market.

of securities, but this did not provide a means of making a permanent increase in the reserve.

Effect of Bank Rate. 18. The rise in the Bank Rate was a sound method of increasing the reserve because it influenced the relative indebtedness of England and foreign countries. First, it discouraged the discounting of bills; if the discount rate rose, the "sight" value of a bill lowered, and this would apply whether it was discounted by the Bank or by a private broker, because the market would follow the Bank Rate. Foreign holders of bills drawn on London were tempted to keep them and wait for them to mature rather than take the lessened sight value. Again, bills would become better investments, for a broker who could wait for a bill to mature would obtain higher interest by discounting it; thus capital was attracted from abroad, and the exchanges turned more in favour of England.

Again, a rise in the Bank Rate was followed by a contraction of credit; men would not pay the higher prices for loans; prices fell, and England became a cheaper place to buy in, but a less favourable place in which to sell; exports were stimulated, and imports discouraged; again, the exchanges turned in favour of England, and gold was ultimately attracted.

Inconvertible Notes. 19. The effect of an issue of inconvertible notes will now be considered. The immediate effect is a rise of prices, due to the redundancy of money; exports are discouraged, and imports encouraged; the exchanges turn against the country concerned, and the price of bills rises above the gold point; this process continues until the level of prices has fallen, approximately, to the former condition. If the exported gold is a large proportion of the world supply, prices will be permanently raised to some extent. If there is no over-

issue, international trade will be carried on as before. If the issue continues, the price of bills may be kept continually at or above the outgoing gold point, and bullion will be continuously exported until the country has lost nearly all its gold. If further issues occur, there will be a permanent rise of prices, which cannot be redressed by export of bullion. Such paper will not be accepted for foreign payments; if the country is drained of bullion, debts may be met for a time by the export of international securities, but these will soon be exhausted.

20. Under these circumstances, the ordinary machinery of international trade may break down. **Breakdown of the Exchanges.** When a country relies on inconvertible paper for internal payments, notes have a higher value in the country than outside; thus, it will probably happen that if such notes are bought by gold bullion, they will be so cheap that more commodities are obtainable by buying goods in the local depreciated currency than by buying them with gold in the country from which the gold was brought. The German mark is so depreciated that it is very profitable to buy paper marks (paying for them even the depreciated and practically, though not nominally, inconvertible English Treasury notes), and then to buy commodities in Germany; this effect will persist the longer, in that trade is not free. Similarly, Americans now find England a cheap place to buy in, but an unfavourable market for their goods.

If all currencies were permanently depreciated, there is little doubt that such anomalies would be removed by a process of barter, and bills of exchange would be replaced as media of exchange by similar but more convenient credit instruments. Finance is in a transitional state; pre-war conditions may return to some extent, but have, as yet, shown few signs of doing so.

APPENDIX I.

MATHEMATICAL ECONOMICS.

Mathematics is essential to Economics, in the sense that arithmetical statements are often necessary to the complete understanding of economic conditions ; facts must often be given in the form of statistics, and the basis of reasoning will then take on an arithmetical form. The more abstract forms of mathematical processes may, however, be utilised in the discovery of economic laws ; mathematics is then a method of reasoning rather than a mere help to the clear statement of facts.

The student who has neither love nor aptitude for abstract mathematics can none the less follow any ordinary economic reasoning ; Economics may be understood and new laws be discovered by non-mathematical methods. The student who has a knowledge of and an inclination towards mathematical processes will, however, derive great benefit and interest from the application of these processes to Economics. Logical processes are often shortened and made clearer by this method, fallacies are exposed, and mistakes may be more easily rectified. Again, it is probable that many results have been reached in the past and will be reached in the future by mathematical methods in cases where they would have been reached much more slowly, if at all, by other logical processes.

Most students have become familiarised with graphical methods, either in an elementary course of algebra or in

their application to physical measurements. To these, the application to Economics will present no difficulty. As an example, the following demand schedule may be considered.

PRICE.			DEMAND.
1s. per lb.	..	...	5½ lb.
2s. „	...	..	3½ „
3s. „	..	.	2 „
4s. „	.	...	1 „
5s. „	..	...	½ „

From these data, a Demand Curve may be constructed, using squared paper. The first step is to decide what scales shall be used. Suppose that demand is measured horizontally and price vertically. If the size of the paper permits, it may be convenient to let one square measured horizontally represent one pound, and one square measured vertically represent one shilling, but other scales may be more convenient. It is not necessary to use the same scale for a unit of weight and a unit of price respectively, but if this is not done, the fact must be noted.

In Fig. 1, unit amount is represented by one large square in each case. The next step is to “plot” the points representing the data in the schedule. Two perpendicular lines are taken as “axes”; the point at which they cross is the “origin.” The paper is arranged so that the origin is at the bottom left-hand corner, the two axes being horizontal and vertical respectively.

Thus the 5s. line will be horizontal, five squares above the horizontal axis; from the origin, five squares are measured vertically, and the horizontal line through the point thus obtained is the line required. At this price, half a pound is sold. The half-pound line is vertical, half a square to the right of the vertical axis; it is found by measuring half a square horizontally to the right of

the origin, and drawing a vertical line through the point obtained. The point at which these two lines cross represents, at the same time, both 5s. and half a pound; it is marked in an appropriate manner. The four other items in the schedule are then represented by points found in the same way.

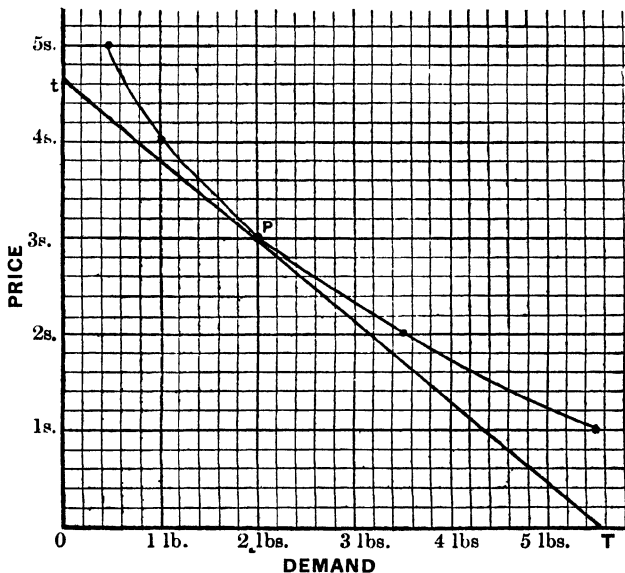


Fig. 1.

Now it is not likely that there will be sudden jerks in the amount demanded, as price rises or falls continuously, especially if the schedule is collective and not individual. It is probable that demand will vary between the points actually marked in a manner which may be predicted

approximately from the general lie of these points. Thus if the points plotted are in a straight line, it is probable that if other data are obtained and the schedule made more complete, the new points which can then be plotted will lie on or near the same straight line. More generally, the points actually obtained will appear to lie on a smooth curve; if such a curve can be drawn to include the plotted points, it is likely that it will represent approximately the general lie of the points that would be obtained if an enormous number of items were obtained in the same schedule between the same limits. Thus it is often possible to obtain a few representative points on a graph, spaced at regular intervals so that a continuous curve can be drawn; it will then be possible to predict with some accuracy the demand which would exist at a price which is not represented in the schedule, but which lies between two prices which are given. Thus, in the figure, it seems that the demand at 1s. 6d. would be about $4\frac{1}{2}$ lb.

A similar graph could have been plotted by measuring demand vertically and price horizontally, but its appearance would as a rule be different. It is advisable to adopt a convention in this matter; it is usual to measure demand horizontally.

A peculiarity of the demand curve arises from the existence of the law of demand; as an increase in price means a shrinkage of demand, it is plain that the curve will slope downwards from left to right; it is then said to slope negatively. If a curve slopes upwards from left to right, it is said to slope positively.

The plotting of a graph is a general method of exhibiting pictorially the relations between two quantities. Thus a Supply curve could be drawn in the above fashion, given a supply schedule. The laws of diminishing utility and return could be similarly represented. There is abundant

opportunity in Economics for the use of the graphical method.

A demand curve is a useful aid to the understanding of the meaning of elasticity of demand. If the curve is steep at any point, it follows that a large fall in price from that represented by the point will occasion only a small increase in demand; other things being equal, therefore, the steeper the demand curve and the more inelastic is demand. Elasticity, however, depends on proportionate and not absolute changes in price and demand; it thus depends on the position of the point on the curve as well as on steepness.

[Sections marked with an asterisk can be understood only by those who have some knowledge of the higher mathematics. A knowledge of the notation of the infinitesimal calculus and of analytical geometry is required, this can be obtained in a short time by students familiar with graphical methods and with the elements of trigonometry.]

* Let P be a point on the curve; join OP ; draw the tangent at P , and let it cut the x - and y -axes at T and t respectively. Then the elasticity at the position represented by P is given by $PT:Pt$ (Marshall). This ratio is equal to $y \operatorname{cosec} PTO \div x \sec PTO$, or $\frac{y}{x} \cot PTO$. But $(-\cot PTO)$ is the definition of dx/dy . Thus the ratio is equal to $-\frac{dx}{x} \cdot \frac{y}{dy}$, which is elasticity. If elasticity is unity, then $dx/x + dy/y = 0$. Thus, $\log x + \log y = \log (\text{constant})$, i.e. xy is constant. Thus the rectangular hyperbola $xy = \text{constant}$ would be a demand curve which represented unit elasticity along its whole length.

The non-mathematical student must accept the statement that a curve can be drawn which everywhere repre-

sents unit elasticity. If any point is taken on such a curve, the product of the perpendicular distances from the two axes is always the same. In economic terms, if the product of price and quantity is always the same, i.e. if the same total amount of money is paid whatever the price per unit, elasticity is unity. If at any point the demand curve in question is steeper than the "rectangular hyperbola" through the point, elasticity under the given conditions is less than 1, and *vice versa*.

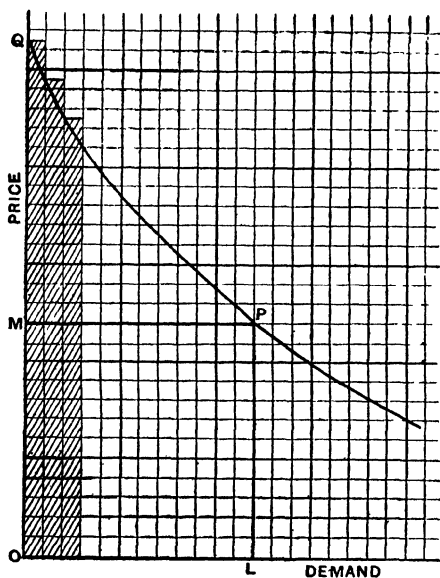


Fig 2.

If the curve had been drawn so that price was measured horizontally and demand vertically, greater steepness would imply greater elasticity, and *vice versa*.

The demand curve well illustrates consumers' surplus. In Fig. 2 let P represent a point on a demand curve which cuts the vertical axis in Q . Draw PL and PM respectively vertical and horizontal. If a very small amount of commodity were available, the price the buyers would be willing to pay would be OQ . Thus the pleasure derived from this first amount is represented by the thin rectangle whose height is OQ and whose width represents the small amount in question. The utility derived from a further amount (for convenience the same amount) is represented by the area of another rectangle of the same width but whose height is slightly less, for the demand curve is sloping negatively. Thus the whole pleasure obtained from the amount OL can be represented by a series of thin rectangles side by side. We may make the successive units as small as we like; make them so small that a single rectangle is so thin that it can hardly be seen. When the rectangles were comparatively wide, their summits formed a series of steps downwards from left to right; in this case, the steps will have disappeared, and have been replaced by the demand curve.

The whole utility obtained is thus represented by the figure bounded by PL , LO , OQ , and the demand curve QP . The whole price paid is the price per unit, or OM , multiplied by the amount bought, or OL ; it is thus the area of the rectangle $MPLO$. Thus the consumers' surplus is measured by the area bounded by the straight lines PM and MQ , and by the demand curve QP .

*The utility obtained is measured by $\int_0^{OL} y \, dx$. Thus the consumers' surplus is $\int_0^{OL} y \, dx - OL \cdot OM$, i.e. $\int_0^x y \, dx - xy$, the coordinates of P being (x, y) .

If a supply schedule is given, a supply curve may be

drawn in the same way as a demand curve. The main difference is that it does not necessarily slope negatively. If the commodity in question is made according to decreasing return, a larger supply necessitates a higher price; thus the curve runs upwards to the right, *i.e.* the slope is positive. Under constant return, the graph is horizontal. Under increasing return, however, a larger supply can be obtained at a less cost per unit; thus, the curve slopes negatively, like a demand curve.

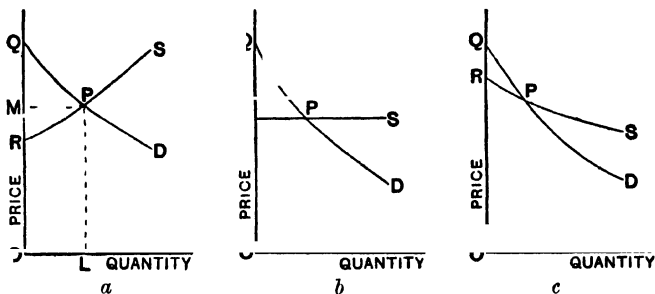


Fig. 3.

The position of equilibrium is easily and conveniently found by means of curves, when the schedules are given. In Fig. 3a, a commodity is represented which is made under decreasing return; the supply and demand curves cut each other at *P*. For an amount less than that represented by this point, the supply price is less than the demand price, as will be seen if the vertical line which represents that lower amount is drawn; the seller will normally increase production. For greater amounts than that represented by *P*, demand price will be lower than supply price, and supply will be contracted. As long as the amount is different from the *P* amount, there will be

a tendency to reach that position. Thus the point of intersection of the two curves represents a point of stable equilibrium. The same reasoning holds when the commodity is made under constant return, or even under increasing return if the supply curve is then less steep than the demand curve.

If the supply curve is steeper than the demand curve at a point of intersection, similar reasoning to the above will show that the equilibrium at that point is unstable; a slight displacement from that equilibrium will lead to a further displacement towards another and stable equilibrium. The existence of such a possible unstable equilibrium is a question of theoretical interest mainly.

Producers' surplus may now be graphically represented. As before, draw a horizontal line through P (in Fig. 3a), to cut the vertical axis at M ; let the supply curve cut this axis at R ; as before, draw PL vertical to cut the horizontal axis at L . Then by similar reasoning to that employed before, it is seen that the amount OL would be forthcoming if the seller (or sellers) received a total price represented by the area $ROLP$; he actually receives the amount represented by the area $MOLP$. Thus the producers' surplus is represented by the area RMP .

* Suppose the equation of the supply curve is $y = f(x)$ and that of the demand curve is $y = F(x)$. Then if (x, y) is the point P , the consumers' surplus is $\int_0^x F(x)dx - xy$, and the producers' surplus is $xy - \int_0^x f(x)dx$.

The principles involved are capable of wide application. The student who has mastered these principles should apply them to other economic problems. Thus rent may be represented by an area, as in the case of consumers' surplus. Equal doses of capital and labour may be

measured horizontally, while return is measured vertically, or *vice versa*; in these two cases the area will be the same in size but not in position. Taxation problems give a further opportunity for the use of the graphical method. A tax may be regarded as a rise in the cost of production, and thus is responsible for a lifting of the supply curve throughout the whole of its length, the demand curve being unaltered.

The application of mathematics to the marginal method involves a knowledge of the notation of the differential calculus, but the student who has understood the above will have little difficulty in following the reasonings of the next section.

Consider now the relation between the quantity consumed of a commodity and the total utility of that quantity. Let quantity be measured horizontally and utility vertically. If none of the commodity is consumed, the total utility is obviously zero; thus the utility curve passes through the origin. Suppose that it is possible to construct a schedule connecting quantity and utility; from the data given it may be possible to construct a graph like the demand and supply curves.

Whatever the commodity, the utility curve will follow the same general course, though its actual shape will differ widely for different commodities. If the commodity possesses any utility at all, the curve after leaving the origin will rise to the right; in certain exceptional cases it may for a time continue to rise more steeply; we found that for some commodities the total utility of the first two small units was greater than twice the total utility of the first unit. Sooner or later, however, the law of diminishing utility comes into play; when this happens, the curve may continue to rise, but it will rise continuously less steeply. (See Fig. 4)

If any commodity is consumed in sufficient quantity, a time will come when an extra unit will give no additional satisfaction; although quantity changes, the total utility remains momentarily constant. This is represented graphically by a horizontal line at M ; the graph is momentarily (perhaps for a very short time) level. If more of the commodity is consumed, pleasure is replaced by distaste, and total utility diminishes; thus the curve falls to the right, with increasing steepness.

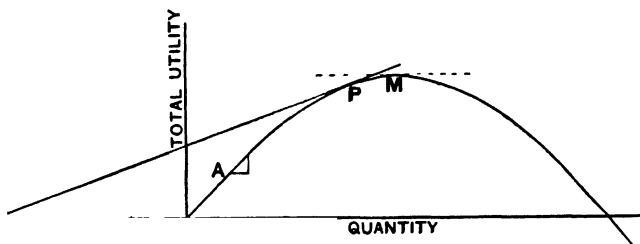


Fig. 4.

Consider now the effect of small increases of consumption at different times. If consumption has just begun, the marginal utility is high, *i.e.* a small unit gives a large satisfaction. Suppose A is a point on the curve near the origin; a small unit of quantity is represented by a short horizontal line drawn to the right from this point; if the curve is here steep, and thus the corresponding increase of utility is comparatively large, the vertical distance required to be traversed before the curve is again reached is correspondingly large. Thus, if all the horizontal steps are equal, the marginal utility at different points is measured by the small vertical distance¹ obtained as above described. The steepness of the curve gives a measure of marginal utility.

¹ The horizontal line must be of unit length, and the unit must be small.

The mathematical student will readily realise that if the increments in quantity are infinitely small and equal to dx instead of to a small unit, that marginal utility is measured by dy/dx (dy being the corresponding small increment in y) whatever be the size of the unit employed. (It must be remembered that dx and dy are increments, *i.e.* small changes in x and y ; dx does not mean the product of d and x ; dx simply means a very small *increase* in x .) The important result is reached that marginal utility is the differential coefficient of the total utility with respect to quantity. Thus, value in use and value in exchange (marginal utility) are related. Marginal utility can easily be found geometrically; let P be a point at which marginal utility is required; draw the tangent at P to the curve; then marginal utility is the gradient of this line with respect to the horizontal, or the tan of the angle the line makes with the horizontal. It is assumed that the unit of measurement in each direction is the unit of quantity and the unit of utility respectively; however, even if other scales are used, the gradient may still be used for comparative purposes.

Thus the continuous shrinking of marginal utility is represented by the decreasing steepness, and actually measured by decreasing gradient. Where total utility is momentarily constant before decreasing, the gradient, or dy/dx , is zero; thus the marginal utility falls to nothing when the total utility is a maximum. After this point, an increased quantity means a diminution of total utility, for marginal utility is negative; dy is negative, and thus dy/dx is also negative; geometrically this is seen in the slope of the curve downwards from left to right; when total utility diminishes, marginal utility is negative; when total utility is reduced to zero, marginal utility has a high negative value.

If the equation of a given utility curve is known, the marginal utility can be calculated. Thus a portion of a curve may approximate to conditions given by the equation $y = \sqrt{x}$. In this case, dy/dx can be calculated, its value being $1/2\sqrt{x}$. Thus, by giving any required value to x , the marginal utility at any point may be found.

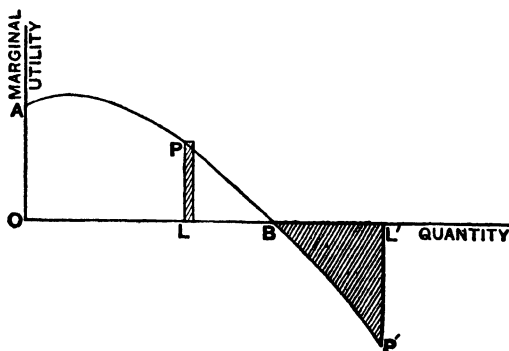


Fig. 5.

Now suppose that a marginal utility curve has been drawn (Fig. 5). Measure quantities horizontally and marginal utilities vertically. The first unit will normally give a positive satisfaction. Thus the curve cuts the vertical axis above the origin; in the case of an objectionable commodity, it would cut it below the origin. If increasing utility occurs at first, the curve will first rise to the right, but sooner or later will fall. When marginal utility falls to zero, the curve cuts the horizontal axis; when marginal utility is negative, the curve falls below this axis.

Let P be any point on the curve; drop PL perpendicular on the horizontal axis. Imagine that consumption

is increased by a very small amount represented by a short horizontal line; PL is then the pleasure derived from unit quantity, and we may suppose that the increase in question is so small that the rate of PL per unit does not change during consumption of the increase.¹ Then the pleasure obtained from the small increase will be represented by the thin rectangle whose length is PL and whose width is the small horizontal line. Thus the whole satisfaction received up to that point is represented by a series of such rectangles side by side. If the rectangles are very thin, their total area will be indistinguishable from that of the figure $AOLP$. Thus if marginal utility is represented by a line, total utility will be represented by an area.

If P' is a point on the curve below the axis, and $P'L'$ is drawn perpendicular, then the area $BP'L'$ will represent negative satisfaction, B being the point at which the curve cuts the horizontal axis. Thus, as before, total utility is a maximum where marginal utility is zero; between O and B the total utility continuously increases, but after this point there is a counterbalancing negative satisfaction. As long as marginal utility is positive, *i.e.* as long as P is above OB , total utility is increasing; when P is below OB , *i.e.* when marginal utility is negative, total utility is decreasing. When total utility is zero, *i.e.* when the negative area below the line just balances the positive area above it, then marginal utility is a large negative amount.

* As marginal utility is the differential coefficient of total

¹ The mathematician will distinguish between dy/dx , which is marginal utility, and the value of dy when dx is unity; this is equal to marginal utility if the unit is infinitely small, but otherwise will differ slightly, for the marginal utility is normally changing continuously.

utility, it must follow that total utility is an integral with respect to marginal utility. If P is the point (x, y) , then the area of a thin strip at P is $y \cdot dx$; thus the area of $AOLP$ is $\int_0^x y dx$. If the equation of the curve is $y = f(x)$, then the area is $\int_0^x f(x) dx$, x being a quantity of commodity, and $f(x)$ the marginal utility.

Consider the bearing of these facts on exchange value. If a man is able to obtain different commodities by exertion of labour, he will not normally produce identical quantities of any two articles. Let us return to the case of fruit-picking, which has the merit of extreme simplicity. Suppose that a single blackberry can be picked with the same amount of effort as a single strawberry: when a man possesses a score of each, it may be that the marginal utility is much higher in the case of the latter fruit. Thus he will apportion his time so that the marginal utility in the two cases is the same, *i.e.* till the differential coefficient of total utility with respect to the number of berries is the same. Thus if $y = f(x)$ is the equation of the total utility curve for a free commodity, labour will be expended so that $f'(x)$ is the same for all the different free commodities. [$f(x)$ means an expression whose value depends on the value of x , and is the symbol for "function x "; thus $3x^2 - 2$ might be described as "function x "; $f'(x)$ is the differential coefficient of $f(x)$ with respect to x .]

This will not happen for most commodities, for most goods must be paid for at varying prices. If strawberries are obtained with greater difficulty than blackberries, then a man would stop gathering the former fruit at a point where it still gave a higher marginal utility than the other; the values of $f'(x)$ for the two commodities will then be in the same ratio as the difficulties of gathering.

Obviously this will also hold in the case of goods which must be bought at different prices. Now suppose that stocks are given, and further acquisition is not possible. Marginal utility for a given person depends only on the amount of stock and on the law of dependence of stock on total utility, but for different persons the form of the utility curve will vary. If all men have identical stocks of the same commodities, it will not happen that the ratio of $f'(x)$ for any two commodities is the same for all persons.

In a community in which there is perfect competition, this equality of ratios will occur as a result of exchange, as explained in the chapter on the marginal theory of value. Thus goods will be exchanged under these circumstances until the marginal utilities of all commodities are arranged in a definite scale for each person, and the scale of all men will be alike. Under these ideal conditions, every man will consider the marginal utility of butter to be ten times (say) that of rice, the units being the same in each case. As relative marginal utility defines exchange value, it follows that the scale of exchange values for every person is identical with the scale of the corresponding values of $f'(x)$.

Money is a commodity, and the above law must hold good for it. Now the ratio of the differential coefficients of total utility of a given commodity and of money possessed, each with respect to quantity, is the same as the differential coefficient of the first of these values with respect to the second. Thus the utility of the marginal unit of commodity, compared with that of the marginal unit of money gives the exchange value of the commodity in terms of money, *i.e.* its price.

This slight sketch of mathematical Economics can do no more than barely suggest the lines along which progress may profitably be made. Those students who are attracted

by the mathematical method should lose no opportunity of applying it to branches of economic science which have not been considered in this sketch; they will also find that much brilliant work has been done which will repay careful study. The dangers of the pure analytical method must, however, be kept carefully in mind; the strong temptation to obtain superficially brilliant results by the application of pure reasoning to complex problems without adequate reference to fact is particularly dangerous in the case of the mathematical method. Mathematics is an aid to reasoning processes; mathematical Economics is not an end in itself.

The following authors may be consulted:—

Cournot: *Researches into the Mathematical Principles of the Theory of Wealth*. (Translated from French.)

Cunynghame: *Geometrical Political Economy*.

Edgeworth: *Mathematical Physics*.

Jevons: *Theory of Political Economy*.

Marshall: *Principles of Economics*. (Notes and Appendix.)

Pantaleoni: *Pure Economics*. (From Italian.)

Pareto: *Cours d'économie politique*.

Pigou: *Economics of Welfare*.

Walras: *Elements d'économie pure*.

Wicksteed: *Common Sense of Political Economy*.

In addition, many modern books contain numerous mathematical applications. Various articles in the *Economic Journal* may also be profitably studied.

APPENDIX II.

SCOPE AND METHOD OF ECONOMICS.

1. Economics may be defined shortly as the study of Wealth, but this simple definition contains implications which compel the recognition of the relation of the subject to every great branch of human thought. Let us assume that material commodities are reckoned as wealth only when they can possess a money price, and that the human actions of which Economics chiefly treats are those upon which such a price can be placed ; it is yet true that the scope of the subject must include the study of the greater part of the experience of civilised man. Even so, however, the attempts of Comte and Herbert Spencer to merge Economics in the wider survey of human relationships which is called Sociology has rightly proved unsuccessful ; the conception of wealth marks out a large class of phenomena which can be studied more effectively when separated for special consideration. Though for convenience separated from Sociology, Economics remains a critical examination of the behaviour of human beings considered mainly, though not exclusively, from the social rather than from the individual standpoint.

Economics is the direct descendant of the subject once known as Political Economy. In former times the student of the nature and history of wealth had to take the actions of government very seriously into account. The great book written by Adam Smith which was to prove a lasting

inspiration to later economists was entitled *An Inquiry into the Nature and Causes of the Wealth of Nations*. No topic recurs in it more frequently than that of government intervention; for to Smith the nation was a political unit which moulded the economic life of individuals. To us in these later days the economic actions of governments (*i.e.* in times of peace) are less important than formerly, though perhaps growing in importance again; thus the term Political Economy has fallen into disuse, as it implies what is now an unjustifiable restriction of scope. On the Continent, however, the old terms linger, and in Germany a distinction is drawn between the economy of a household, of a nation, or of the whole world; in England, the conception of economic liberty has obtained such firm hold that government action occupied (immediately before the war) but a small space in economic investigations.

2. In England the subject is called Economics not, as in Germany, some particular form of Economy. The termination *-ics* has been introduced in order to bring the study into line with other sciences, *e.g.* Physics. The question arose in the last century as to whether Political Economy was a Science or an Art, *i.e.* as to whether the subject was a branch of pure learning or a body of doctrine which could be used at will to remedy the diseases of the nation or to improve the condition of the people. English economists consider that the subject has not yet reached the stage at which a number of rules of practical conduct can be laid down; in spite of the great advances made during the last century and a half, a complete solution of practical problems is still far off.

Again, it is not advisable to treat the subject as a science and an art; the pressure of practical problems would interfere with the true development of the subject

considered as a search after truth ; both the science and the art would suffer. If the disinterested quest after pure truth is hampered at every turn by considerations of practical expediency, the science of wealth will inevitably suffer ; the consequent hampering of theoretical progress will react almost certainly in the long run on the effectiveness of the corresponding art. There is a serious dilemma to be faced ; a portion of the field of enquiry may be simple in structure, a rapid advance in knowledge may be secured, and definite results obtained. There will be a temptation to transfer these results to the solution of problems where the conditions are more complex ; here the solution may be inapplicable, for disturbing factors may be present which overbear the legitimacy of the conclusions. On the other hand, if an attempt is made to obtain a complete solution of any particular problem the conditions may be so complicated that the task will be hopeless.

Economics thus derives its name from the fact that it is a science rather than an art ; it does not seek practical problems, as economists believe that their work will be most fruitful if they avoid the temptation to give immediate solutions of everyday difficulties ; it however does not avoid such problems if their consideration is necessary to the scientific development of the subject. It is possible to develop a system of Economics complete and consistent within its own limits which breaks down when an attempt is made to apply it to real life ; the assumptions made are too far removed from human experience.

Such was the fault of the "classical economists" of the nineteenth century ; economists are to-day coming to realise more and more the necessity of retaining contact with real life and of avoiding dogmatic conclusions true only when certain conditions are satisfied. If close contact is kept with reality, conclusions reached on important

problems will carry in themselves the need for practical application. Economic results rightly obtained will, sooner or later, render their proper application inevitable and automatic. Economics should not be considered as a tyrannical oracle whose word is final, but when the preliminary work has been truly done, Applied Economics will at certain times, on certain subjects speak with the authority to which it is entitled.

Similarly, Economics is a positive rather than an ethical science; it seeks to show what things do happen, under what actual conditions; it does not decide what ought to happen or what ought to be the conditions under which men live. Just as the pressure of practical problems stimulates the study of pure economic science, so also does the presence of widespread economic injustice; here again it is not a wise policy to force the study into those channels which give an immediate result. So, also, ethical considerations should neither be sought nor avoided; inevitably, Economics will in the long run pronounce ethical judgments on important questions, if the search after truth is disinterested.

3. The vexed question of economic method must now be considered. The *Wealth of Nations* was a well-balanced book in which both observation and pure reasoning were used with good effect, but the next great advance in Political Economy was made by an economist of a different type. Ricardo was a Jew who had made a fortune on the Stock Exchange; his race and training alike, aided by his own peculiar genius, gave him an insight into the workings of the economic machine he used so effectively. Yet his genius was narrow; he assumed that mankind consisted of men as keenly devoted to their own money interests as were the financiers around him. He built up a pure science of

**Economic
Method.**

Political Economy on the basis of a few underlying assumptions as to human nature; his success in explaining many important problems stimulated the efforts of economists for half a century; he defined the method of English Economy till the days of John Stuart Mill. In the last half century, opposition to the methods of the classical economists has grown, and this era has been one of disputes between rival schools.

4. The Ricardian method is said to be "deductive" because it deduces new conclusions from fundamental assumptions or from truths established by other methods. It is "hypothetical" because (whether deliberately or not) certain suppositions are made which do not quite correspond to the actual facts, but which are sufficiently near them to allow of confident reasoning from them as premises. It is "abstract" because the hypothetical conditions are chosen so as to make the problem as simple as possible; the facts may be simplified, irrelevant facts which do not affect the main argument being overlooked; the conditions may be considered as being simpler than they really are, as when economists have considered all men as influenced chiefly by love of money; or a portion of real experience may be isolated for study because it is more easily managed than ordinary business life; thus Ricardo did especially valuable work when dealing with money matters, for the springs of action on the Stock Exchange and other markets are simpler than they are in common life. The method is "analytical," because the process of abstraction is extended, and a complex problem is picked into its component parts, each of them artificially simplified.

The rival method is "inductive," because it accumulates facts, arranges them, and then attempts to draw general

conclusions. It is "realistic," because it describes things as they actually are. It is "concrete," because it deals with the subject as it is, as a whole, and avoids artificial divisions. It is "synthetic," because the subject is not divided into component parts, but the opposite process takes place, and a body of truth is built up from a large number of facts drawn from experience.

The best example of deduction is geometry. Euclid made a few fundamental assumptions, and implied others, and on this foundation raised a marvellous structure which is being continually extended. In general Mathematics, the case of imaginary quantities is particularly noteworthy; hypothetical concepts which cannot apparently even exist are boldly subjected to ordinary processes; not only are the results consistent, but a return to reality is possible, and an advance of knowledge made which might never have been obtained by ordinary processes. It is possible that aviation would to-day be in a more backward condition than it is if these apparently fantastic departures from reality had not taken place.

There is little doubt as to the possibility of fruitfulness of the deductive method. Its application to Economics carries a peculiar advantage in that economic phenomena are usually very complex; cause and effect are so intertwined that a survey of the field as a whole is very unlikely to bring out general relations between one set of facts and another. The dangers of the use of this method are, however, very serious.

In geometry there is little fear of false reasoning, for in the first place the fundamental axioms are in accord with universal experience; again, any particular conclusion may be easily tested, and if there is a discrepancy, a flaw in the reasoning may be looked for with confidence. When deductive reasoning is used in Economics, it can

never be safely assumed that the hypotheses on which the reasoning is based are legitimate; even if a definite ascertainable fact is used as a premise the conclusion drawn can have only a limited application; economic conditions are continually changing in place and time, and conclusions obtained by such reasoning must not be applied at another place or another time where the premise does not hold good. Again, it is never easy to test results obtained in economic science; at times the problems are so complex that confirmation is almost impossible. Methods which are fertile in geometry cannot be transferred bodily to Economics.

5. Consider now the highly developed sciences, *e.g.* Physics. Bacon's insistence on the need for inductive method was necessary, for the speculative method had definitely failed.

On the other hand, the Baconian method of experiment was incapable of providing a means of rapid progress on account of the complexity of the phenomena involved. Science has advanced as a result of combination of opposing methods. In an experiment, it is often possible to dispense with an artificial simplification of the conditions by actually creating the simplified set of conditions it is required to study.

An experiment may be used to obtain a premise on which deductive reasoning may be founded, or as a test of previous reasoning. Even in Science, however, it is often necessary to assume a hypothesis as a basis, and if results based on it are confirmed, it may be used again with greater confidence. The Law of Gravitation is simply a hypothesis which experiment has never been able to shake. Einstein has given a new explanation of it, but the Law as a statement of fact remains; such a hypothesis may be used almost as confidently as the Euclidean axioms. The

Laws of Motion, the Atomic Theory, Lyell's Principle of Uniformitarianism, and the Theory of Evolution are examples of fertile hypotheses which have transformed their respective sciences.

Now the biological sciences are much less certain in their results than are the physical sciences. Causes act less clearly, effects are more intricate, great fundamental laws are elusive or apparently absent, and the isolation of causes is very difficult; experiment thus plays a smaller part, while the confirmation of results may be very difficult. Hence the successes of these sciences are usually less startling than the great physical discoveries, and progress is apparently much less rapid. Economic science is allied to Biology rather than to Physics, not merely because it deals with a form of life, but because the appropriate method bears much the same relation to that of Biology that the latter does to the method of physical science.

In one respect, Economics is in a worse position than Biology, in that the use of experiment is all but impossible. Experiment is the actual isolation of causes by an actual simplification of conditions; thus when Newton wished to study the effect of gravity undisturbed by the action of the air, he performed his famous feather and guinea experiment in vacuo. Cairnes suggested that hypothesis was a substitute for experiment, for it isolated causes in theory, but hypothesis alone is a poor substitute. In some way experience, treated as a whole, must take the place of experiment.

6. The adherents of the purely inductive method (usually known as the Historical School) are right when they lay stress on the unsuitability of the use of long chains of deductive reasoning in Economics. These are too often based on facts or hypotheses which have at most a limited application, and often depend on

Laws.

assumptions as to human conduct which are only partially true. Thus the earlier economists of last century assumed that the love of money was the determining factor in economic life, and it is easy to show that there are many other factors which must be given due weight. Yet adherents of the deductive school can point with pride to the actual and permanent achievements of men like Ricardo; again, they may point out how unlikely it is that an investigator can grind out important general results from the heterogeneous mass of information which the inductive economist must use. As in the exact sciences, true progress is obtained only as a result of a wise combination of induction and deduction. *

The task of a scientist is the discovery of "laws." In essence, a scientific law is simply a summary of the statements of a large number of apparently disconnected facts; the scientist tries to find a single statement which shall apply to and include the facts in question; thus, universal experience as to falling bodies and many other facts as well are included in the application of the Law of Gravitation. A tentative hypothesis may be brought forward to explain a group of facts; if it can explain new facts and is not contradicted by new discoveries, it may be elevated to the rank of a theory; if it continues to stand the test of experience, a law may be formulated. Even in Physics it is recognised that the statement of a law involves no finality, for if one single exception is established, an explanation must be forthcoming or the law be thrown aside; scientific history is full of discarded theories. A law is often not so much false as incomplete; an apparent exception may lead to a development of the law in a truer and completer form.

Certain physical laws are almost as precise as the propositions of Euclid. Scientists possess instruments of

incredible delicacy, but they have never shown any inconsistency in the working of the numerical law of gravitation which could not be accounted for by the presence of disturbing factors, *e.g.* friction. In Biology, and still more in Economics, the preciseness to some extent disappears; the usefulness and even the validity of economic laws have been seriously called into question by economists of the historical school. Modern economists do not place much reliance on apparently simple and precise results obtained by purely deductive reasoning, but they admit the existence of ordered relationships between economic facts; they assume the possibility of obtaining laws similar in kind but differing in degree of preciseness from those of Mechanics. They realise that in all branches even of Physics, laws may work smoothly in simple cases, but that disturbing forces usually occur whose effects are explained by further analysis.

It is thus said that economic laws are statements of "tendencies," for the disturbing forces are more important than they are in Mechanics; an economic law is the statement of the results that would inevitably follow the working of a certain cause if no disturbing factor were present. If a commodity is raised in price there will be a tendency to check consumption, but this may be overborne by counteracting causes; so the law of gravitation does not apparently apply to a rising aeroplane. It cannot, however, be too strongly stated that the existence of such a disturbing force in no way affects the validity of the original law, provided this is given in an exact form.

7. Economics is not concerned solely with a search after general laws, and simple collections of facts form a useful portion of economic study; as a rule, however, guiding principles are sought whenever possible.

Function of
Descriptive
Economics.

The main work of induction serves either to find leading principles, or else to test or correct the work of deduction. On rare occasions true experiment is possible, notably in the case of experimental methods of production of wealth, and also of new legislative measures; in most cases induction must rely on observation and arrangement of existing conditions rather than on an artificial control over events. Certain abnormal experiences, *e.g.* the Black Death or a great war provide invaluable information similar to that given by an experiment, just as the study of insanity throws light on the constitution of the normal mind; such opportunities are comparatively rare. When observation can be thrown into a numerical form it may be subjected to the powerful processes of statistical method; even when induction is purely descriptive, careful attention to order and selection may be sufficient to expose the guiding principles involved. Here again, however, the limitations of any single method are made plain, for no empirical law can carry real conviction until it has been explained, *i.e.* examined in the light of deduction.

8. The great mistake of Ricardo and his followers did not lie in the fact that their assumptions were not quite true—they did not pretend to be—but in the fact that they failed to test their results at every turn in the light of experience. If they had been sufficiently careful to modify their successive results before proceeding to forge the next link in the chain of deduction, their final conclusions would have commanded wider acceptance. Much of the best work done in Economics in the last half century has consisted, not in the destruction, but in the correction and development of the work which was ably but one-sidedly carried out by the aid of deduction.

Political Economy grew out of the postulates that the

**Shortcomings
of the Classical
Economists.**

"economic man" was dominated by a self-interest inspired by intelligent motives, and that capital and labour were so fluid that they would flow from place to place, and from country to country, through the stimulus of more favourable conditions. Ricardo's profession was carried out in an environment where these postulates were nearly true; later economists tried to transplant his results to cases where the circumstances were quite different. The choice of the right postulates will open the way to a rapid and brilliant advance based on pure reason, but before the results obtained can possess practical value, they must be brought into contact with real life.

9. While the fact that progress is the result of a combination between different methods must be stressed, it is necessary to note that the precise nature of the method is not the same in every department of the science. Economics is not a "natural region" of thought, though it is bound together by the common concept of wealth. The laws of value and problems of currency are best treated by a method mainly deductive, while the different methods of wealth production lend themselves to inductive treatment.

The method varies also at different stages of progress of the science; the present-day drift towards induction is largely a result of the great attention paid to analytical methods in the past. In branches where descriptive methods hold the field at present, it may be necessary in the future to subject a mass of facts to analysis and to deduce general laws. In the long run it will be found that each department will be treated by the appropriate method, by investigators possessing the requisite type of ability; if deduction is carried too far, it will be necessary to adjust the balance, while if the method is too realistic,

Variability
of Economic
Method.

there will be ample opportunity for deduction from the accumulated facts.

10. The historical economists laid justifiable stress on the doctrine of relativity. In opposition to the assumption of the classical economists that enlightened self-interest and free competition were the guiding principles of economic life, they pointed out the immense influence of custom, especially in past times and in less civilised countries. Thus they denied that the conclusions of Political Economy were universally applicable, and showed that the subject was dependent on social conditions in the place and at the time dealt with in any particular investigation.

Without sharing their attacks on the classical economists, it is necessary to remember that Economics is a changing subject; it must alter with every change in social environment. The late war has perceptibly moulded the subject, though the broad conclusions formerly reached have been amply confirmed. Only in the so-called "stationary state" could a stable body of doctrine be evolved, unless the subject were so perfected that every possible change in conditions could be foreseen and accounted for. On the whole, the more stable are the conditions the greater will be the relative importance of the inductive method. At present, economic freedom is growing in many directions; we are far from the stationary state which has been predicted as our future lot.

Both great methods may be used in various ways. The methods of the classical economists could easily be thrown into arithmetical form; they have branched into the mathematical method of Jevons, etc., and the psychological method of the Austrian economists (*e.g.* Wieser). The rival method is historical, merging into Economic History (*e.g.* in Germany), the statistical which is essentially

arithmetical but involves the higher mathematics, and the purely descriptive, increasingly important at the present time.

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APPENDIX III.

THE STRUCTURE OF ECONOMICS.

1. Economics is grounded on the conception that the pressure and variety of human wants call forth corresponding efforts with a view to the satisfaction of such wants. The subject does not usually include an enquiry into the moral nature of wants, not because economists are careless of ultimate good, but because the forcible introduction of the moral element would cause needless complexity. Thus all things which satisfy human wants are classed as "goods"; this term has unfortunately no equivalent in English in the singular, but "commodity" will be used in this connection. Goods on which a money value can be placed are called "economic goods" or Wealth.

We are at once met with a difficulty to which Economics is peculiarly susceptible. The subject deals with the affairs of the market-place, and must use common business terms if it is to be understood by the ordinary man. All sciences need a number of definitions whose meaning shall be precise enough for the purpose in hand. The difficulty is avoided in Natural Science by the use of terms specially invented from a Latin or Greek root; such a solution in this subject would give an unreal aspect to Economics, and its practical use would be greatly diminished. Again, in common life, the meaning of a word like "wealth" is by no means fixed; such a term must yet be made in some

way to replace the highly artificial definitions of exact science.

There are two alternatives ; a common word may form a root, and the various definitions desired may be obtained by using adjectives or suffixes ; many rigid definitions grouped round a few common words may thus be obtained. A better plan is to use the common words in their usual meaning, retaining their natural flexibility. When the word is used in any given connection, it should be made clear what exact meaning is to be given to it in the particular enquiry ; it will then be quite legitimate to use the word in a slightly different sense in another connection, if the change in meaning is notified. The use of such a definition will correspond to the use of symbols in Algebra ; "Just as we say, 'let x , y , z , mean' now this, and now that, in different problems" (Bagehot).

2. In common language, wealth is not usually taken to include (except in metaphor) important "free" **Wealth.** goods such as air and light ; economists follow common usage in restricting the term "wealth" to those goods on which a money value can be placed. Goods may be material or personal, and the goods personal to a human being are either external or internal ; a man's internal goods are his abilities in various directions ; the chief example of external personal goods is business connection. Internal goods are excluded from the scope of the term "wealth." Goods may also be free or appropriated ; as civilisation advances there is a tendency towards the appropriation of free goods ; fishing rights which are free in a primitive community are jealously guarded in England to-day ; free goods are excluded from the conception of wealth. Goods may be transferable or non-transferable ; material goods are usually transferable, as is also a part but not the whole of a man's business connection.

3. A man's wealth in the economic sense consists of two parts—first, the material goods which he holds as private property, thus excluding the free goods he enjoys; second, the external personal goods owned by him: the former class is transferable, the latter partly so. It is sometimes convenient to include a man's personal abilities (so far as they assist in acquiring goods possessing a money value) as part of his wealth, but it is then best to use the term "personal wealth" to include those internal personal goods which are excluded from the scope of economic wealth. The wealth of a person (which must be carefully distinguished from personal wealth) is not usually held to include those goods which he holds in common with all his neighbours, though it does include a share in the goods owned in common with a few partners. A city reservoir is owned in common by a large number of people (apart from debt charges); although appropriated, being the property of the city, it is best to consider it as "col-lective wealth," and not to include it as part of the wealth of the individual citizens.

Thus in estimating the wealth of a city we should add the wealth of the individual citizens to the collective wealth of the city, the latter including municipal property and businesses; we should subtract the debts owed to individuals in other cities, and also the debts owed by the municipality; debts from one citizen to another might be neglected as they balance each other. For many purposes such free goods as a navigable river or an attractive beauty spot might be included. A share in the Houses of Parliament would not be included in city wealth, for these are not appropriated by the city. National wealth, however, would have to include this and all other cases of economic goods appropriated by the nation; national debts

to foreigners must be subtracted, though internal debts may be neglected. Fishing rights, *e.g.* in the North Sea, may be included, but the oceans are unappropriated. In considering world-wealth, all debts may be neglected; from some points of view the oceans may be included.

The notion of wealth is a paradox; the wealth of a country may increase, though the number of desirable¹ things be constant. In this case there would be no increase of goods, but there would be continuous appropriation. In mediaeval times, the common lands would not be counted as wealth, though their social utility, *i.e.* the total pleasure given to the community, was very great; when enclosures began, the land became wealth, because appropriated, though its social usefulness might diminish. Wealth is by no means synonymous with welfare, by which is meant amount of human happiness, but is an artificial concept, useful in everyday life and still more useful in economic theory. This is a similar difficulty to the paradox of value.

4. As Economics is a true science, some means of measuring wealth must be found. Money, **The Money Standard.** "this economist's balance, rough and imperfect as it is, has made Economics more exact than any other branch of social science" (Marshall). Money and price are familiar terms to all; philosophically speaking, the concept of money is artificial and rather difficult to understand, but there is no difficulty in the usual use of the term; like an electrical instrument, it is much easier to work than to understand. The money balance is intricate in structure, but it is used with confidence by all civilised men.

¹ Note that the term "desirable," unlike "welfare," is not concerned with the real importance to mankind of a given pleasure; it contains no moral element.

The wants of man are varied, and his feelings still more so; yet the only method of measurement is money. Feelings, however, cannot be measured directly, but only through the actions to which they are an incentive. Further, the states of mind of different individuals can be compared only through their outward manifestations. Money can be only a rough measure even of external action; it cannot pretend to interpret the nature or the extent of the feelings behind action. It is plain that if Economics aspires to become an exact science it must confine itself largely to phenomena in which the money element is dominant.

It must be insisted that money is simply an external measure, and that we cannot attempt to measure the quantity or quality of feelings directly. We can and do say that if a man hesitates whether to pay a shilling to see a football match or to spend an hour in a picture gallery at the same price, he expects to receive about the same amount of "satisfaction" from one as from the other. We cannot attempt to compare the two kinds of pleasure directly, nor can we take account of the fact that one pleasure may be of a purer type than the other. To the economist, purely as such, the satisfactions expected by a visit to the racecourse or to a philanthropic meeting will be the same to a given person, if that person is willing to pay the same price (under the same conditions) for the two satisfactions.

The economist cannot avoid opinions on such matters, and they will often appear in his work; they must not be allowed to affect his analyses when his reasoning is based on purely monetary considerations. Economists, however, deal with real men, not with abstractions like the economic man of the classical economists; they may try to abstract the economic side of individuals; reasoning is thus made

easier, but the conclusions must not be pushed beyond the limits between which they are true.

5. The money measure is very effective within its limits when a particular individual is being studied, **Its Defects.** but must be applied with caution when comparison between different persons is attempted. If one man desires a commodity so much that he will pay a shilling for it, while another will offer two shillings, it by no means follows that the latter person desires it even as much as the former.

This is particularly noticeable in the case of a comparison between a rich and a poor man. Though the latter is starving, he may only be able to offer a penny for a loaf, while the former will offer a far higher price if he is slightly hungry; it cannot be pretended that the rich man will receive greater satisfaction than the other. If, however, we are dealing with large numbers of people, or with an average man, these differences will be less important; we may assume fairly confidently that the same amount of money will represent about the same satisfaction in the case of two average men of equal wealth living under similar conditions; when numbers of persons are considered, individual peculiarities tend to cancel out; *e.g.* an insurance company can safely predict the approximate amount of the claims made by a number of people in a given time, however uncertain each particular claim may be.

6. The great antithesis in Economics is that between wants and the efforts required to satisfy **Consumption and Production.** those wants. Some fundamental human needs are satisfied in abundance without effort on man's part, but the great majority of human wants are met by a limitation of the goods which can satisfy them. Man wishes continually to "consume," but limitation of goods forces him to "produce." His wants

are satisfied by desirable goods—his efforts are put forth to produce economic goods, *i.e.* wealth. Wants may be satisfied by all desirable goods, free or appropriated; the aim of production, as a rule, is the increase of the stock of wealth.

At different periods in the history of economic science, stress has been laid in varying ways on the different subdivisions of the subject. Consumption was largely neglected by the early investigators; although greater attention has been paid to it of late years, it still occupies a subordinate position. The money measure is more effectively applied to the study of production than to that of consumption; even to-day it is more convenient to regard the theory of wants as a branch of Hedonics (the study of pleasure and pain), and to concentrate attention on the external and material side of wealth. Until the money measure is as useful in the study of wants as in that of production, or until Economics extends its boundaries, the material side of wealth must figure more prominently than the mental phenomena connected with consumption. Economics, however, is most conveniently introduced by a preliminary study of wants and their satisfaction.

7. Man cannot create wealth; he can only take the goods supplied by nature or by previous production, and change their form so that they serve some useful purpose. Neither matter nor energy can be created, but energy may be controlled so as to become the instrument for the change of matter from a less to a more effective state for the satisfaction of human wants. The true Agents of production are matter, energy, and direction, but their full consideration would involve physical science; a more convenient analysis is required in Economics. We therefore say that the requisites of production are Land, Labour, and Capital,

**Agents of
Production.**

and to these, modern economists have added Organisation ; these are the Agents of Production considered in Economics. When brought together, the requisite matter and energy are present, and Labour supplies the directive intelligence which decides what wealth shall be produced, and how the process shall be effected. The agents used in making a commodity (the plot of land, the human labour, the machinery, etc.), are called the Factors of Production of that commodity.

8. Land has the same meaning as in ordinary life, but for analytical purposes is taken to include
Land. all gifts of nature, such as mines and fisheries ; it includes not only coal and oil, but also the other natural forces, *e.g.* wind and water, and in considering agricultural questions will also include air and light. This is done because the general laws which hold for land in the narrow sense also hold for the other elements of Land ; in fact, the analysis is often incomplete unless the other elements are considered.

9. "Labour" is sometimes used as meaning the working
Labour. population, but as a rule its meaning in Economics is that of work done in order to produce wealth. Work is not always painful, though for the purpose of some analyses it is rightly regarded as negative satisfaction. Work may be very pleasureable ; in many cases men are paid a salary for doing work which they would be willing to do if required to pay for the privilege. Many games and recreations (*e.g.* mountain climbing), hobbies, and much social work entail hard toil, and much of the necessary work of the world is carried out free of cost. Yet most men work harder and for longer periods than they would if they consulted their inclination ; the essence of the everyday work of the world is the production of wealth, and the pleasure derived from such

work is usually secondary. For economic purposes, Labour is best defined as work which is undertaken, partly at least, with a view to immediate or ultimate production of wealth. If a man, engaged in exhausting mental work, spent a strenuous holiday for the avowed purpose of recuperation, he would perform Labour. The term includes all kinds of work leading to wealth production, hand and brain work alike.

10. In this connection the conception of Productive Labour must be noted. It was formerly the custom to draw rigid distinctions between different trades, some being marked off as unproductive, but this notion leads to many inconsistencies and absurdities. The French economists of the eighteenth century (the "Physiocrats") believed that manufacturers were sterile, because they did not create wealth; in their opinion, the agriculturists were the productive class. The early English economists believed that labour was productive if it increased the value of the goods treated. Mill believed that labour was productive if it produced permanent utilities, whether invested in man or in external goods; so far as the conception is useful it is best to say that labour is more productive if it produces durable goods or leads to further production than if it produces articles of luxury to be consumed at once.

It is now recognised that some classes, *e.g.* retail shopkeepers, formerly termed unproductive, may really be the means of a greater production than if they had taken up productive work in the former sense. The term "productive," *e.g.* in "productive consumption," should be avoided when possible, and if used should refer to conditions which tend to increase future wealth.

11. Labour is conditioned by certain Necessaries. In order that labour shall be forthcoming, the labourer must

live; hence we reach the concept of "necessaries for existence." These are far below what is required to keep the labourer in a state of health and strength sufficient to allow him to put forth his maximum effort and so to secure the greatest efficiency; thus we must distinguish necessities for existence and for efficiency. When, however, a class has obtained a certain "standard of comfort," it is loth to give it up. There are certain habits, *e.g.* of dress and recreation, which a labourer would prefer to retain even at the cost of necessities for efficiency; they are called "conventional necessities."

Necessaries of Labour. 12. The definition of the term Capital raises considerable difficulties. From certain points of view it is a very definite conception, *e.g.* a factory loom is universally regarded as capital; in its wider meanings it depends on the more fundamental concept of Income. In the widest sense, Income is the flow of satisfactions from wealth. As an economic term, it does not include the satisfactions from free goods, *e.g.* light and air; its meaning is, however, not limited to money income, as it is in common speech. Income has various economic meanings, and to each there corresponds a particular meaning of capital. We may define Capital as that which yields an Income, though for many purposes we may derive a true conception of certain forms of capital directly.

Capital and Income. In considering capital as an agent of production it is not at all necessary that income shall be in the form of money, though it will usually be possible to estimate it at a money value. On the other hand, the wealth from which the corresponding income is to be derived will not be identical with the total stock of wealth. A piano yields a series of satisfactions, but it is classed as capital only in the unlikely event that those satisfactions are classed as

income; when for any reason it is desired to apply the terms capital and income to such a commodity, it is best to speak of Consumption Capital and Consumption Income; when a commodity is consumed for its own sake, we say it yields consumption income, and the commodity is consumption capital. Capital and income commonly bear a more restricted meaning; unless consumption capital is definitely included for a particular purpose, it may be taken that the meaning of capital is more restricted than that of wealth. Capital is thus a portion of the whole stock of wealth, segregated for purposes of production; income is a flow of wealth produced by capital in combination with other agents. A loom is a form of capital because it helps to yield an income measured by the money value of the cloth produced.

13. We may distinguish three main types of capital and income. If capital is regarded as identical with wealth, the corresponding income is called Usance (Marshall). The Types of Capital. The usance of a motor car is the total flow of satisfactions of all kinds which the car yields, whether or not it is used to produce further wealth; this is the least important case for our purpose. The common meaning of capital and income lies at the other extreme; a business man looks to gain a money income from his work, and his view of capital comprises the economic wealth required to produce such income. Capital regarded from the standpoint of the individual business man may be called Trade Capital; this is one form of Lucrative Capital, which may be defined as wealth belonging to an individual, yielding a money income to the owner. A man living on the proceeds of consols owns lucrative capital, which in this case is not trade capital.

Trade capital is a portion of the whole lucrative capital of a country; on the other side it is connected with Social

Capital, which is a more useful concept in economic analysis than usance or lucrative capital. Stress is here laid on capital as an agent of production rather than as a means of yielding a money income to an individual; trade and social capital consist mainly of the same things, but they are not identical; the simple term "capital" is here taken to mean social capital, unless it is obvious from the context that trade capital is meant. Social capital may be defined as the whole of the accumulated wealth which, in combination with the necessary land and labour, organised in the appropriate manner, yields the whole of the national income (or National Dividend); land is to be understood in the wide and inclusive sense mentioned above.

Capital may be "free" ("floating"), or else "sunk." Free or floating capital is mobile, in that it can be moved easily and quickly from owner to owner and from trade to trade. Sunk capital is that which is meant for a particular use, and cannot easily be transferred to another use. Thus money intended for payment of wages is floating capital; an old loom just worth keeping is sunk capital. Rigid definitions are rarely possible in Economics, and distinctions are largely matters of convenience; thus a new loom or one which could easily be adapted to other uses would represent capital not irretrievably sunk, and yet not free; in this as in other cases of apparently exact classification there is a continuous series ranging from one extreme to the other.

Capital may be "circulating" or "fixed." Circulating capital is that used on one occasion only. The raw material in a factory exists simply that it may be turned into cloth in one complete process, while machinery may be used time after time. The latter represents fixed capital, because its services continue throughout a series of operations.

The wealth which aids labour in production is called **Auxiliary Capital** (*e.g.* machines and raw material), as opposed to consumption capital. In early times, auxiliary capital was of little importance relatively to labour, especially in agriculture, but the use of expensive machines is increasingly important. To-day, auxiliary capital is concentrated in factories where wealth is made on a large scale far exceeding the wants (for the articles produced) of those engaged in production. In early times, each family was almost self-supporting, and consumed the goods it produced.

14. Thus modern life is peculiarly characterised by the importance of Exchange and Distribution.

Exchange. The manufacturer can best satisfy his wants indirectly; he makes goods of one kind in bulk, and exchanges them for the goods he personally needs. When, as in primitive communities, the process is direct, it is called **Barter**; in modern Economy an intermediary is necessary, *i.e.* money. Money is mainly under the control of governments, and the money system of a country is called its **Currency**. The process of exchange has been systematised, and the amount of metallic money been reduced to a minimum by use of a banking system.

15. Distribution represents another side of the same process; each of the agents, *i.e.* land, labour, capital, and organisation demands a share in the product; "distribution" is the arrangement of the resulting wealth among the owners of the factors of production. A person may thus derive wealth in two ways; he may obtain it as a reward for services he has just previously given, or receive it because he "owns" as his private "property" one or more of the factors of production other than labour (the absence of slavery is assumed). In Economics we deal rather with the rewards

of the factors as such, for the laws governing division between persons are much more complex than those governing "distribution." The reward due to Land is true economic Rent. (N B.—Here as elsewhere a word is put in capitals when it is desired to use it in its distinctive economic meaning, as opposed to its popular meaning.) The rents of houses, machines, etc. present certain points of difference.

The reward to capital is called Interest; capital (usually lent in the "floating" form of money so that it may buy the necessary factors of production) is a necessary aid to a business man; he is willing to give part of his product for its use; on the other hand, men will not be willing to lend all the money required in business unless payment is made for it. Thus interest is the payment made for the use of money, *i.e.* of floating capital. As there is some risk that the money will not be returned, an additional payment is usually required, representing insurance against risk.

The payment to labour, manual or mental, is called Wages, which includes the common term "salary." It must be noted, however, that the money wage of an occupation is not certain to represent the exact attractive force exerted on workers. Often a high money wage necessitates subjection to unpleasant conditions of work or to unavoidable expenses, while an apparently low wage may be coupled with privileges or advantages on which the recipient places a high money price. If to the money wage we add the money price of accompanying advantages and subtract that of disadvantages, we reach the conception of Net Advantages, measured in money.

The fourth agent of production cannot be rewarded in any precise fashion; its aid is usually given under circumstances over which the individual producer has incomplete

control; it is a social agent, but the reward is gathered in part by the man who undertakes the risks of business. He is called an undertaker, enterpriser or *Entrepreneur*; he borrows capital (or uses his own), employs labour, and organises the business. At the end of a year (say) he will estimate the money price of all his outgoes, and subtract it from the money price (estimated if necessary) of his product, including that which has been sold; he will also make allowance for improvement or depreciation of machinery, etc.; the excess of receipts over expenditure is then called Gross Profits. Out of this he will pay interest on borrowed money, and allow for the interest he would have received had he put out his own money on loan instead of in his business.

He will also pay (or estimate) insurance on the risks of his business and pay rent for the use of his land, or estimate it if the land is his own. The remaining profits may be called Gross Earnings of Management; part of these is of the nature of salary which he would have to pay if the work had been done by a manager, and is called Net Earnings of Management; the remainder represents the share due to organisation, *i.e.* to the task of bringing together the requisite labour and capital.

16. Exchange and distribution are linked by the important concept of Value. Formerly this word had two meanings in Political Economy, best given in Adam Smith's own words: "The word VALUE . . . has two different meanings, and sometimes expresses the utility of some particular object, and sometimes the power of purchasing other goods which the possession of that object conveys. The one may be called 'value in use'; the other, 'value in exchange.' The things which have the greatest value in use have frequently little or no value in exchange; and, on the

contrary, those which have the greatest value in exchange have frequently little or no value in use. Nothing is more useful than water; but it will purchase scarce anything; scarce anything can be had in exchange for it. A diamond, on the contrary, has scarce any value in use; but a very great quantity of other goods may frequently be had in exchange for it."

Although it is often necessary to use definitions which vary with the conditions, economists cannot afford to use a term in two such dissimilar senses as the above. Value, as an economic term, now always means value in exchange; value in use, in the above sense, is replaced by the term Total Utility.

Value is a ratio; the value of one commodity in terms of another is the amount of the second commodity which will exchange against unit quantity of the first. If a horse exchanges for ten sheep in the open market, the value of the horse expressed in sheep is 10; plainly, the value of the horse will also be ten times that of the sheep when both are expressed in some other unit. The value of a commodity is not a property; it is not something belonging to it, like colour or weight, but varies as conditions vary. The most important case of value in practice is money value, which differs in no essential respect from the value of one commodity in terms of another, but which, because of its practical importance, receives the special name of Price.

Values are continually changing; they cannot all rise or fall together (though prices can); if the value of *A* in terms of *B* rises, that of *B* in terms of *A* must fall. Values and prices, however, tend in ordinary times to oscillate about a mean level, and such an oscillation value is called a Normal Value. The term Normal must be used with caution, and a qualifying phrase must always

be expressed or understood ; take a definite instance, *e.g.* fresh fruit : the normal price of strawberries in the season is far below the normal price in spring, and if we consider mean annual price, the normal price in 1919 was much above that in 1913, while the normal price of a good year is likely to be below that of a bad year. Thus the term normal must be used only when the conditions are stated or implied.

The study of price is so important that it is treated separately in connection with banking and foreign trade, though the underlying principles are the same as those familiar in the body of economic science.

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Many of the above books (e.g. Seligman and Schmoller) contain full bibliographies.

¹ Translated into English.

The *Economic Journal* is a necessity to the advanced student, who should refer also to *Economica*, to American periodicals like the *Quarterly Journal of Economics* and the *Journal of Political Economy*, to the *Journal des Économistes*, and the *Revue d'Économie Politique* (Paris), and to the *Giornale degli Economisti* (Rome).

Above all, the student should remember that Economics is a living subject, and that much of his material must be obtained from sources other than text-books, *e.g.* from the financial and news columns of newspapers.

GLOSSARY OF ECONOMIC TERMS.

ABSTINENCE: Postponement of consumption. Interest was formerly regarded as the reward to abstinence.

AGENTS OF PRODUCTION: The things necessary to Production, generally taken as Land, Labour, Capital, and Organisation.

BANK RATE: The rate at which the Bank of England discounts bills of good security.

BARTER: Direct exchange of commodities, without use of money.

BILL OF EXCHANGE: A written order to pay a definite sum of money at a definite future date, "drawn" by a creditor and "accepted" (signed) by his debtor.

BIMETALLISM: A currency system in which standard coins of two separate metals circulate, each legal tender to any amount, the rate of exchange between them being legally fixed.

BULLION: Uncoined metal suitable for coinage.

CAPITAL: Wealth set aside to assist in future production of new wealth.

CARTEL: A group of firms working in common: the independence of each firm is limited, but not necessarily destroyed.

CHEQUE: Legally, a bill of exchange drawn on a banker payable on demand.

CLASSICAL SCHOOL: The economists who treated Political Economy as a deductive science; it flourished in England from the time of Ricardo to the time of Mill.

COLLECTIVISM: Form of Socialism which holds that industry should pass completely into the hands of the State.

COMMODITY: Used as the singular of "goods."

COMMUNISM: Form of Socialism inspired by early Christian and other influences; it holds that all goods should be held in common.

COMPOSITE DEMAND. Demand for a commodity by varying types of consumers, *e.g.* demand for leather by bootmakers, saddlers, etc.

CONSUMERS' SURPLUS: Excess price which a man would pay for an article if he could not otherwise obtain it, over what he actually does pay.

CONSUMPTION: The satisfaction of the desire for a commodity.

COST OF PRODUCTION: The total sacrifices incurred in producing a commodity.

CURRENCY: The legal monetary system of a country.

DEMAND: Demand for a commodity is amount of commodity which would be bought at a given price; economic term "demand" is meaningless unless price is expressed.

DERIVED DEMAND: Demand for an intermediate commodity necessary for the production of a required commodity.

DIMINISHING RETURNS, LAW OF: The produce obtained from intensively cultivated land is less than proportionate to the capital and labour employed.

DISTRIBUTION: Division of National Dividend among owners of factors of production.

DIVISION OF LABOUR: The splitting up of a complex process of production into simple stages, each of which can be mastered more easily than the process as a whole.

ECONOMICS: The Science of Wealth.

ECONOMY: (Gr. *oikonomia*—household management.) Obtains its modern meaning by analogy; thus, Political Economy must deal partly with economic activities of Governments—Domestic Economy deals with the management of a household—a Gold Economy is an economic system depending on the use of gold currency, etc.

ELASTICITY: Elasticity of demand for a commodity at a given price level is the percentage fall in the amount bought when the price rises 1 per cent. Similarly, we speak of elasticity of supply, etc.

ENTREPRENEUR: The man who undertakes the risks of business. He is not of necessity an employer, or owner of capital, though this is often the case.

EXCHANGE: A portion of Economics which, under present conditions, must deal mainly with sale and purchase rather than with direct barter.

EXPENSES OF PRODUCTION: Money price required to obtain the Factors of Production of a given commodity.

FACTORS OF PRODUCTION: The Land, Labour, Capital, and Organisation required to produce a given commodity.

FREE TRADE: Trade unimpeded by Protective duties.
(*See* Protection.)

FRICTION, ECONOMIC: Obstacles to free play of competition, and to free movement of labour and capital.

FUTURES: Buying and selling of goods to be delivered at a future date, *e.g.* the buying of a harvest months before it is reaped.

GOLD STANDARD: Currency system based on gold money of definite weight and fineness as legal tender.

GOODS: Things that satisfy human wants.

GRADING: Method of assessing comparative qualities of various units of the same commodity.

IMPACT: Impact of tax is point at which tax is actually paid at first; the burden may then be "shifted."

INCIDENCE: Incidence of tax is point at which burden is ultimately felt.

INCOME: *See* Appendix III.

INDIVIDUALISM: Theory that society progresses best when each individual may follow his own inclination, it assumes, however, that persons and property must be protected, and free contracts enforced.

INTEREST: The payment for the use of money.

IRON (OR BRAZEN) LAW: The theory that the wages of the working classes tend to be depressed down to the level of mere subsistence.

JOINT DEMAND: Demand for a combination of commodities, *e.g.* there is a joint demand for labour, bricks, etc., when there is a demand for houses.

LABOUR: Exertion performed with a view to Production of Wealth.

LAISSEZ-FAIRE: *See* Individualism.

LAND: The direct gifts of Nature which are used in Production.

LAW (ECONOMIC): A statement of tendencies in matters affecting Wealth.

LAW OF DEMAND: If the amount of a commodity offered for sale in a market is increased, the price falls, and *vice versa*, other things being equal.

LAW OF DIMINISHING (DECREASING) RETURN: *See above.*

LAW OF INCREASING RETURN (DECREASING COST): In large-scale manufacture, an increase in labour and capital usually produces a more than proportionate return.

LOCALISATION OF INDUSTRIES: The tendency of an industry to concentrate in certain districts, thus allowing of economies in Production.

MANCHESTER SCHOOL: The upholders of Free Trade in the first half of the nineteenth century. *See* Classical School.

MARGINAL RETURN: The return to that portion of a factor of production which it is considered just worth while to apply.

MARGINAL UTILITY: The utility of the last consumed unit.

MARKET: A group of buyers and sellers among whom, or a district within which, the price of a given commodity is nearly constant.

MONOPOLY: Partial or exclusive control over the supply of a commodity, leading to partial or total absence of competition.

NATIONAL DIVIDEND: Total amount of wealth produced in country in a given period.

NORMAL PRICE: The price about which the constantly changing prices of a commodity tend to oscillate.

ORGANISATION: The mutual grouping of men and materials in such a way as to facilitate Production.

PRIME COST: The addition to the costs of a business necessitated by the production of a particular unit of commodity.

PRODUCTION: The making of new wealth.

PROFITS: A loose term meaning the rewards obtained by entrepreneurs.

PROTECTION: A system of taxation of foreign goods the aim of which is to stimulate home industry.

QUANTITY THEORY OF MONEY: In its crudest form, states that prices are proportional to the amount of money in a country.

QUASI-RENT: The surplus profit obtained by the owner of a factor of production when the factor can only slowly be increased in quantity.

RENT: The payment made for the use of Land.

SUPPLEMENTARY COST: The costs which are incurred independently of the production of a particular unit of commodity.

SUPPLY: The amount of a commodity which holders are willing to sell at a certain price; "supply" is meaningless unless price is given.

TOTAL COST: The sum of Prime Cost and Supplementary Cost.

TOTAL UTILITY: The sum of the utilities of all the successively consumed units of a commodity.

TRUST: A combination of firms under more unified control than in the case of a cartel.

USANCE: The total amount of satisfaction obtained from the possession of a commodity.

UTILITY: The capacity to satisfy a want.

VALUE: The number of units of a standard commodity which will be exchanged for one unit of the commodity in question.

WAGES: The remuneration paid to Labour.

WAITING: Has replaced "abstinence" as an economic term—interest is the remuneration paid for "waiting."

WEALTH: Appropriated goods which can possess a money value.

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